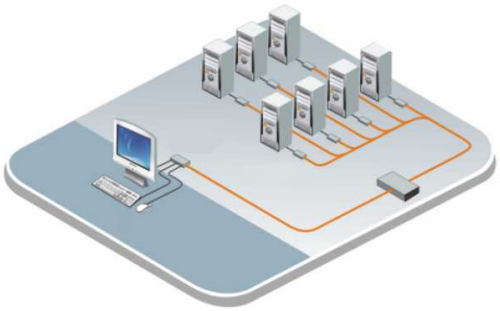
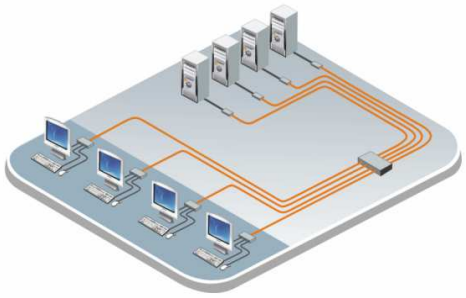
ORION

ROSE.COM



KVM Switch



Cross-point Switch

10707 Stancliff Road
Houston, Texas 77099

Phone: (281) 933-7673
www.rose.com

LIMITED WARRANTY

Rose Electronics warrants the Orion™ to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one-year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

Limited Warranty service may be obtained by delivering this unit during the one-year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTED ABOVE, YOUR SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. IN NO EVENT WILL ROSE ELECTRONICS BE LIABLE TO YOU FOR ANY DAMAGES INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR THE INABILITY TO USE SUCH PRODUCT, EVEN IF ROSE ELECTRONICS OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

IBM ®, AT, and PS/2 are trademarks of International Business Machines Corp.
Microsoft ® and Microsoft Windows™ are registered trademarks of Microsoft Corp.
Apple, Macintosh, and ADB are trademarks of Apple Computer, Inc.
Sun is a registered trademark of Sun Microsystems Inc.
Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owner

Copyright Rose Electronics 2009. All rights reserved.
No part of this manual may be reproduced, stored in a retrieval system, or transcribed in any form or any means, electronic or mechanical, including photocopying and recording, without the prior written permission of Rose Electronics.

Rose Electronics Part # MAN-OR-SR
Printed In the United States of America – Rev

EUROPEAN UNION DECLARATION OF CONFORMITY

This is to certify that, when installed and used according to the instructions in this manual, together with the specified cables and the maximum CPU- cable length <3m, the Units:

List on page 2 – 5

are shielded against the generation of radio interferences in accordance with the application of Council Directive 89/336/EEC as well as these standards:

EN 55022:	1999 Class A
EN 55024:	1999
IEC 61000-4-2:	2001
IEC 61000-4-3:	2001
IEC 61000-4-4:	2001
EN 61000-3-2	2001
EN 61000-3-3	2002

The device was tested in a typical configuration with CPU.

Monday, March 30th, 2009

This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

TABLE of CONTENTS

Contents **Page #**

Disclaimer 1
Introduction 1
  Crosspoint Switch mode 1
  KVM Switch mode 1
About This Manual 2
  Features 2
  Compatibility 3
  DDC Information 3
  Selecting the moment of switching to next frame 3
  Selection of Color reduction for transfer acceleration 3
  Package contents 3
  Product registration 3
System Overview 4
Orion Model Description 5
KVM Switch Installation 6
  Powering Up the System 7
  Configuration menus 7
  Keyboard Control: 7
  On-screen-Displays 7
    Menu 7
    Login Menu 8
    Configuration Menu 8
    Configure open menu 9
    Configure system menu 10
    Touch Screen settings 12
    Configure user 13
    User Matrix Configuration 14
    CON Port Configuration 15
    CON Matrix Configuration 17
    CPU Port Configuration 18
  Status Information 19
    Status Display – CON ports 19
    Status Display – CPU ports 20
    Status Display – Network 21
    Status Display – Firmware 21
Operating the Orion Unit 22
  HOT Key switching 22
  OSD / KVM mode switching 22
  KVM-List mask switching 23
    Keyboard Commands 23
  KVM-Switch mask switching 24
    Keyboard Commands 25
    Follow-Me function 25
    Keyboard Commands (Follow-Me mode) 26
Cross Point Switch Mode (COM mask) 27
    Keyboard Commands: 28
Cross Point Switch Mode (CPU mask) 29
    Keyboard Commands: 29
Switching using a Browser / Web Interface 30
Switching using a Serial Interface 30
Operating modes - Overview 31
  Single-Head KVM switch mode 31
  Dual-Head KVM switch mode 32
  Quad - Head KVM switch mode 33
  Single - Head KVM switch / USB 2.0 mode 34
  Devices with serial/audio option 35
  Serial Interface – Handling Multiple Serial Devices 35

Audio Interface - Setup and Operation 35
Audio Interface – Using a Microphone 35
Service Information 36
Maintenance and Repair 36
Technical Support 36
Troubleshooting 39
Troubleshooting - Monitor 39
Troubleshooting – USB Keyboard / Mouse 39

Figures Page

Figure 1. Orion Models 5
Figure 2. Typical KVM Switch Configuration 6
Figure 3. OSD Main Menu 7
Figure 4. Login OSD 8
Figure 5. Configuration menu 8
Figure 6. Open configuration file menu 9
Figure 7. Configure System menu 10
Figure 8. Touch screen calibration 12
Figure 9. Configure User menu 13
Figure 10. User Matrix Menu 14
Figure 11. CON port configuration 16
Figure 12. CON Matrix Configuration 17
Figure 13. CPU Port Configuration 18
Figure 14. Status menu 19
Figure 15. Status - CON ports 19
Figure 16. Status – CPU Ports 20
Figure 17. KVM-List menu 23
Figure 18. KVM-switch mask 24
Figure 19. Follow Me mask 25
Figure 20. Crosspoint Switch menu (CON Mask) 27
Figure 21. Crosspoint Switch menu (CPU Mask) 29

Appendices Page

Appendix A – General Specifications 40
Appendix B – Part numbers 41
Appendix C – DDC / Color depth set-up (Local Unit) 42
Appendix D – Serial switching commands 44
Appendix E – Programming Macros 47

INTRODUCTION

Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, circuitry of the product, and manual content at any time without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product.

(See limited warranty)

Introduction

Thank you for choosing Rose Electronics® Orion ™ System. The Orion System is the results of Rose Electronics commitment to providing continued state-of-the-art switching solutions for today's demanding workplace. The Orion System has proven to be a valuable investment for all types of businesses that have the need to monitor, maintain, route, switch and access information from multiple computer systems. Its use in large computer and multimedia facilities gives the IT professional the added flexibility to monitor and maintain all systems, running on different platforms, from one or multiple KVM stations. The Orion System is the common sense solution that provides the flexibility, expandability, and security required for today's business environment.

Rose Electronics' Orion System is designed to configure to whatever your system demands are, one user or multiple users, two computers or hundreds. All configurations offer standard features that allow for easy, secure, and complete access to as many computers as your system has from one or multiple KVM user stations. CATx or fiber cabling is used to connect the computers and user stations to the Orion unit. Using CATx cabling the distance can be up to 450 feet (140m), using singlemode 9µ fiber cabling, the distance can be up to 6 miles (10,000m). This greatly reduces the cable bulk and makes installation easier, quicker, and less expensive.

The convenient on-screen display (OSD) menus are intuitive and easy to use. The menus guide you through the configuration process, making it easy to configure the Orion.

The Orion is used along with an extender transmitter and receiver. The transmitter connects to your computer or video source and the receiver connects to your DVI monitor, USB keyboard and USB mouse. The transmitter and receiver units connect to the Orion unit using CATx or fiber cabling. The transmitter and receiver models will vary depending on the application.

The Orion can be configured to function as a Crosspoint switch or a KVM switch. An additional feature allow the Orion to be set-up in the "Follow Me" mode. An overview of each configuration mode is described below. See the appropriate manual section for a detailed description of the installation, configuration, and operating procedure for each mode.

Reliability, security, versatility, and other advanced technological features ensure the Orion System will streamline your data center or server room, simplify the maintenance, access and updating of your systems, and easily expand as your system demands increase.

Crosspoint Switch mode

The Crosspoint switch mode allows you to switch one or more video outputs (16) to any or all video inputs (32). The Crosspoint switch menu makes connecting and switching easy. Select the monitor to display the video source on, select the computer to switch to the selected display and press the space bar. Instantly the computer's video is displayed on the remote monitors.

KVM Switch mode

The KVM switch mode can be set-up to function as: a 16 user to 32 single head CPUs, 8 user to 16 dual head, or 4 user to 8 quad head CPU KVM switch and also two additional unique features, "Partner" viewing and the "Follow Me" feature. Partner viewing allows for the distribution of the main display content to one or more remote displays. The "Follow Me" feature shows your actions on other displays, even changing sources.

About This Manual

This manual covers the installation, configuration, and the operation of the Orion System. The Orion System consists of three components; the Orion unit, the extender transmitter(s), and the extender receiver(s). Each component of the Orion system is described in this manual. The Installation section for each mode describes how all components are interconnected to form a seamless switching network. The Operations section for each mode defines how to operate the system and all the user features available to make switching and maintenance simple and easy.

Features

- The Orion can be configured as:
  - A single head KVM Switch (32 CPUs / 16 User stations (Cascadable to 1024 sources)
  - A dual head KVM Switch (16 CPUs / 8 user stations)
  - A quad head KVM switch (8 CPUs / 4 user stations) or
  - A Crosspoint switch (32 video source inputs / 16 video outputs)
- Supports all DVI-D Graphic cards
- DVI-D video resolution up to:
  1920 x 1200 @ 60 Hz (Single Link)
  2560 x 2048 @ 60Hz (Dual Link)
- Supports:
  - USB keyboard and USB mouse*
  - CATx or fiber cabling (Multimode and Singlemode fiber)
  - USB 2.0
  - Bidirectional audio
  - Serial interface
  - 16 / 24 Bit auto-switching or 24 Bit color depth (selectable)
- CATx and fiber connector modules can be mixed within a single unit.
- Extended distances:
  - CATx cable – 460 feet (140m)
  - Multimode 50µ – 1,300 feet (400m)
  - Multimode 62.5µ - 656 feet (200m)
  - Singlemode 9µ - 32,800 feet (10,000m)
- Access via On Screen Display, serial, web-based GUI, or hotkey commands
- LED indicators for power and link status
- Dual power supply option
- Rack mountable

* Orion KVM standard devices with USB-HID connectors support the extension of the keyboard and mouse ONLY; use with other HID devices (Human Interface Device) such as touch screens, graphics tablets, barcode readers or similar USB devices may be successful – but there is no guarantee for this! The Orion™ KVM standard device is NOT suitable for use with other USB devices such as scanners, web-cams, data sticks etc.

  Orion KVM standard devices support only two USB devices simultaneously, keyboard and mouse or keyboard and touch-screen, etc. but not keyboard, mouse and touch-screen simultaneously. You can extend by a USB hub but this does not raise the number of supported devices.

Compatibility

Video	Digital (DVI-D): Digital Video standard installed by DDWG - R, G, B, CLOCK in a data stream with up to 3x 1.6 Gbit/sec. Signals are TMDS level.
Keyboard	Compatible with all standard USB keyboards. Certain keyboards with enhanced features may also be supported with custom firmware. Keyboards with a built-in hub are also supported – but there are never more than two HID devices supported.
Mouse	Compatible with all standard USB 2-button, 3-button and wheel mice**.**
CATx / Fiber Cables	The Orion Switch may be equipped with both CATx GBICs and fiber GBICs. This allows both fiber and CATx Signals to be switched with one Unit. NOTE: Switching must be from a CATx source to a CATx destination and Fiber source to a Fiber destination. CATx to Fiber or Fiber to CATx is **NOT** possible.
Fiber	Supports singlemode (9µ) and multimode (50µ and 62.5µ) cables.

DDC Information

Normally, it is not necessary to make any adjustments to the Orion KVM/ Media device. However, in some circumstances, it may be necessary to redefine the source of DDC information for the CPU. By default, the unit uses its own internal DDC table. If this setting does not satisfy your requirements, the DDC table can either be switched to the DDC table of the locally attached screen or can be downloaded from the remotely located screen and stored in the internal DDC table. The default is to download the DDC table from the remote monitor.
(See appendix C for instructions on how to modify the DDC setup)

Selecting the moment of switching to next frame

The transmission of screen data is not synchronous to the screen changes of the graphic card. Normally, the transmission is terminated during the display of a frame on the screen (at the remote unit). If the device switches to the new frame during the displaying period of the old frame (somewhere on the screen), it is possible that you will see horizontal screen breaks at the moment of switching (default). On the other hand, if the device idles until the actual frame is displayed completely (until VSYNC) then the number of frames per second transmitted may be reduced.
(See appendix C for instructions on changing the switching behavior)

Selection of Color reduction for transfer acceleration

You can select, whether always 24 Bit colors (=full color depth) are transmitted or whether the compression algorithm automatically switches between 16 and 24 Bit colors to accelerate the data transfer (default). Normally the difference between 24 Bit and 16 Bit is not recognizable but under some special circumstances e.g. in photo processing installations there might be disturbing color abbreviations. While the automatic color switching enhances the number of frames, transmitted per second, fixed 24 Bit color depth gives smooth color grades under all circumstances.
(See appendix C for instructions on how to select the desired mode)

Package contents

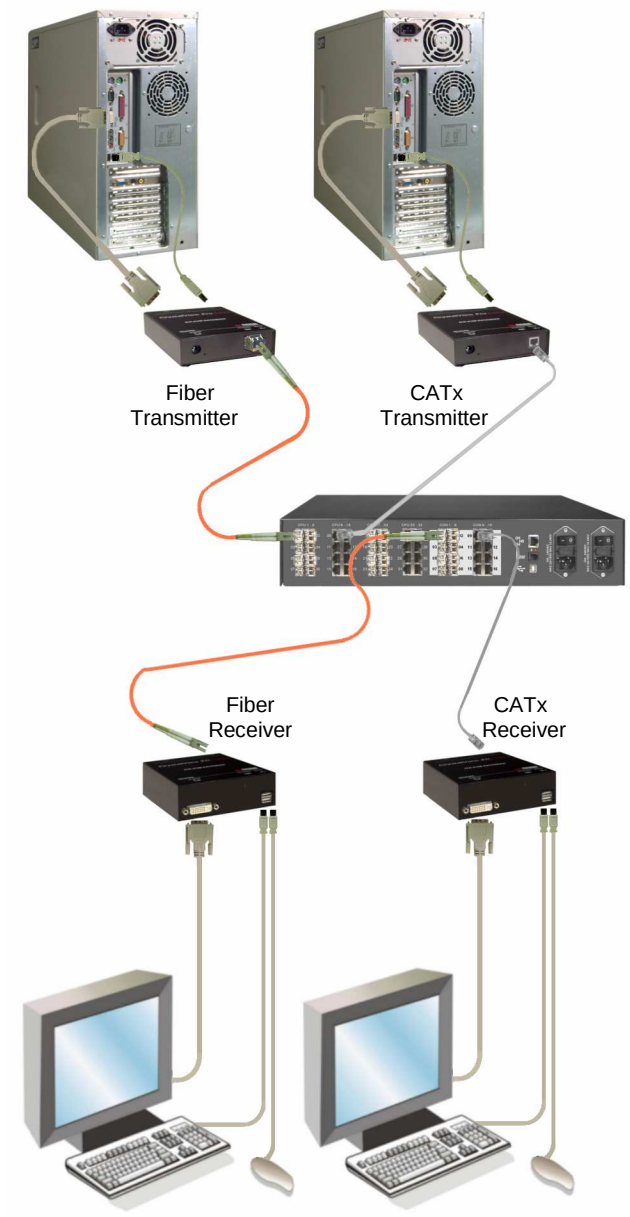
TO BE DETERMINED

Product registration

Register your product for future updates at: www.rose.com/htm/online-registrationform.htm

System Overview

The Orion system consists of the main Orion unit configured with the CPU and CON modules for your application (CATx or Fiber). Each CPU port connects to a CATx or Fiber transmitter using a CATx or fiber cable. Each CON port connects to a CATx or Fiber receiver using a CATx or fiber cable.



The versatility of the Orion unit makes it easily adaptable to your system environment. It can be configured for a KVM switch where each user can connect and control any connected computer.

In the KVM switch mode, a unique feature called “Partner Viewing” allows a console user to share the active display content on one or more displays.
Another feature is the “Follow Me” feature. This allows other displays to follow every action made by the console user.

In the Crosspoint switch mode, up to 32 video sources can be switched to 16 video outputs. You can switch a video source to 1 output or 16 outputs.

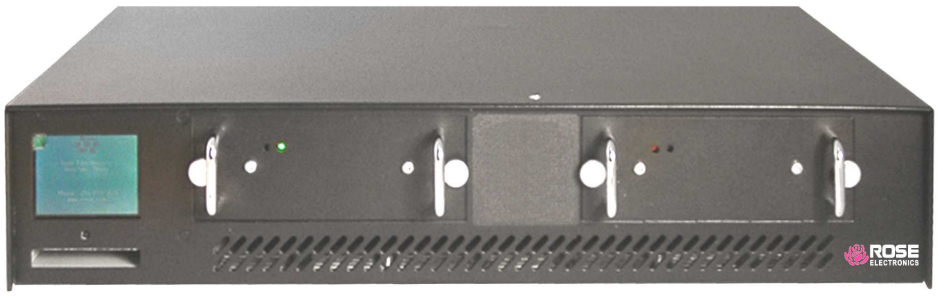
Each CPU input and CON output must connect to an extender transmitter and extender receiver. Rose Electronics offers a wide variety of transmitters and matching receivers to handle your specific application:

- Single, dual, and quad head DVI-D video models
- Local access models
- Serial and audio models
- CATx or Fiber models
- 4x USB 2.0 transparent ports for compatible USB 2.0 peripherals

The installation, configuration, and operation for each of the different modes are explained in the appropriate manual section for the application the Orion unit is going to be configured for.

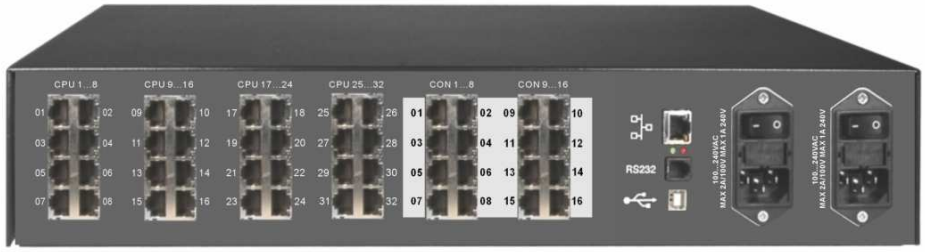
Orion Model Description

FRONT VIEW



All models

REAR VIEW

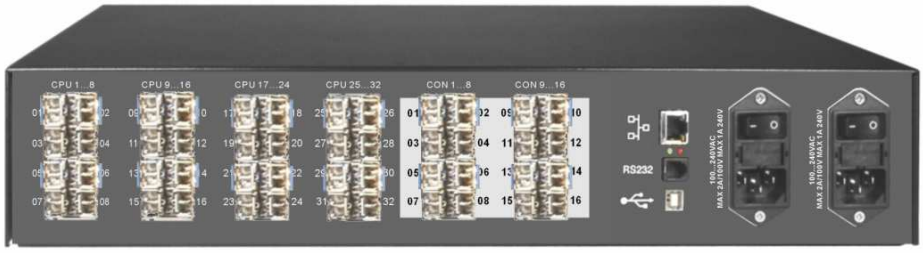


Catx modules

CATx modules

Connectors

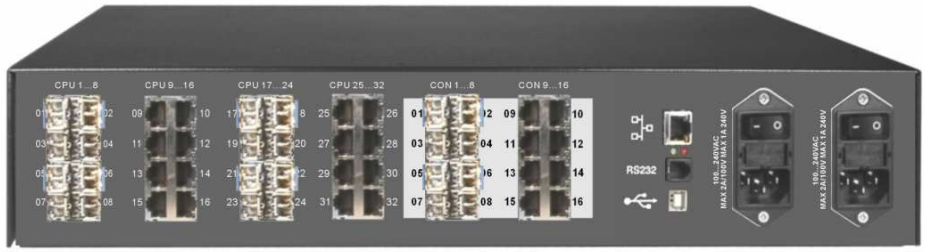
1 or 2 IEC320 power inputs
32-RJ45F Inputs
16-RJ45F Outputs
1-RJ11F Network
1-RS232 Serial
1-USB Type B



(Singlemode or Multimode fiber modules)

Fiber modules

1 or 2 IEC320 power inputs
32-Fiber LC type Inputs
16-Fiber LC type outputs
1-RJ11F Network
1-RS232 Serial
1-USB Type B



CATx and Fiber modules

CATx / Fiber modules

Figure 1. Orion Models

NOTE:
Models that have mixed CATx and Fiber modules should be used with care. A CATx CONx KVM station can not connect to a fiber CPUx port or a fiber CONx KVM station can not connect to a CATx CPUx port. Remember, connect only CATx to CATx and Fiber to Fiber.

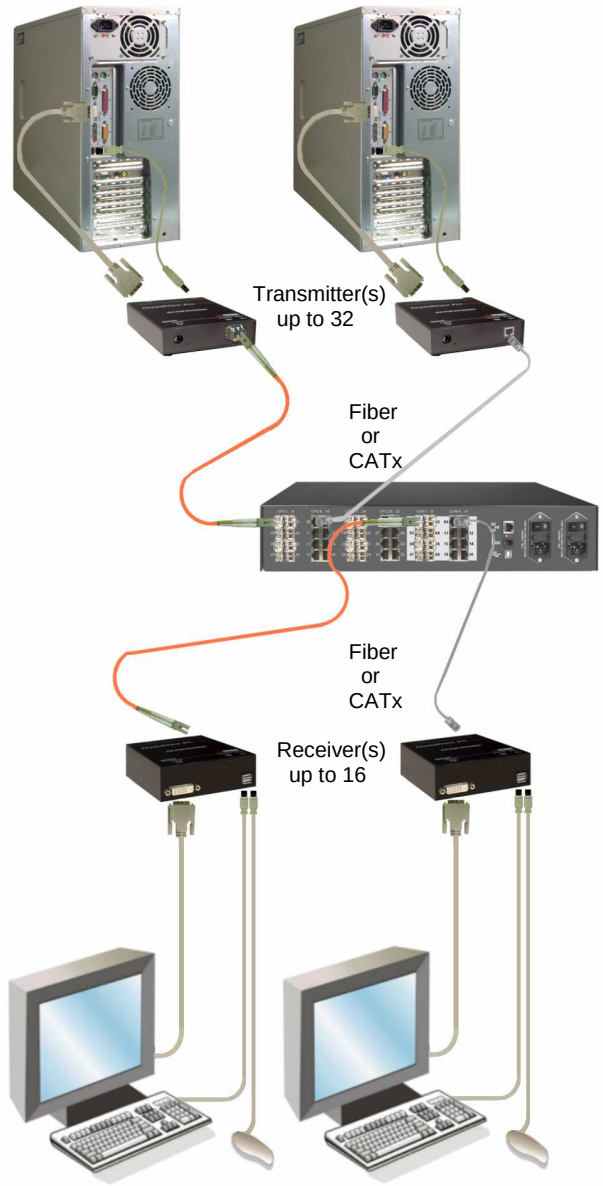
INSTALLATION

The installation section of this manual is divided into a section for the KVM Switch installation and for the Cross-Point Switch installation procedures. Please turn to the section needed for your application.

KVM Switch Installation

As a KVM Switch the device supports several operation modes:
(See appendix F for cascading configuration example)

- 16 User ports and 32 CPU ports for Single-Head access
- 8 User ports and 16 CPU ports for Dual-Head access
- 4 User ports and 8 CPU ports for Quad-Head access.
- Single, Dual, and Quad CPUs and User ports may also be operated in mixed mode. The maximum number of User ports depends on the detailed configuration.
- A maximum of 32 CPUs (up to 10 km away using fiber cable) can be connected to the Unit via Local transmitter units installed at each CPU.
- Up to 16 user remote user stations (up to 10 km away using fiber cable) can be connected to the Orion unit via remote receiver units installed at each console.



The installation of the local transmitter(s) and remote receivers(s) will vary depending on the needed application. (Single head, dual head, or quad head KVM switch, serial and audio options, etc.)

Basic transmitter installation:
(Each connected computer must be connected to a KVM transmitter and each remote KVM user station must be connected to a KVM receiver)

1. Connect the DVI video connector(s) from the computer to the transmitter using a DVI-I MM cable.
2. Connect a USB cable (Type A to Type B) from the computer's USB Type A connector to the transmitters USB Type B connector.
3. If the transmitter has the serial and audio options, connect these ports to the transmitter using standard stereo audio cables (MM) for the speaker and microphone connectors and a DB9 serial cable from the computer to the transmitter.
4. Connect a CATx or Fiber cable (depending on the model – up to 32 cables) from the transmitter's port to the corresponding CPU port on the Orion unit.

Basic receiver installation:

1. Connect the DVI-I video monitor's cable to the corresponding connector on the receiver
2. Connect the USB keyboard and USB mouse to the keyboard and mouse USB ports on the receiver
3. If the receiver has the serial and audio options, connect a speaker set to the speaker connector and a microphone to the Mic input connector.
5. Connect a CATx or Fiber cable (depending on the model – up to 16 cables) from the receiver's port to the corresponding CON port on the Orion unit.

NOTE: If you Orion unit has a mixture of CATx and Fiber modules, care should be taken to only connect a CATx connected user station to a CATx connected computer or a Fiber connected user station to a fiber connected computer.

Figure 2. Typical KVM Switch Configuration

Powering Up the System

Apply power to the Orion unit, the receivers, transmitters, KVM monitors and all connected computers. Once all equipment is fully powered up, the system can be used to switch from any user station to any connected computer.

Configuration menus

The configuration of the Orion unit is easily done using the On-Screen menus. To display the menu system, enter the key sequence <Ctrl>+ <Shift>+ <O> (Letter “o”), The “KVM List” Mask is displayed full screen (If Option “Listview” is not active, “KVM Switch” Mask will display instead)
Exit the “KVM List” Mask, if needed, by hitting <ESC> and the “Menu” will displayed full screen as shown below.

Keyboard Control:

To navigate within any OSD menu, use the following key sequences:

- <Cursor left> only inside an Input field or Switch Mask
- <Cursor right> only inside an Input field or Switch Mask
- <Cursor up> Line up (with wrap around) in Input fields or Switch Mask,
  Line up (without wrap around) in Menus
- <Cursor down> Line down (with wrap around) in Input fields or Switch Mask,
  Line down (without wrap around) in Menus
- <Page up> Page up in Input-/Status Masks with several pages
- <Page down> Page down in Input-/Status Masks with several pages
- <Tab> – Next field in Input Masks
- <Shift> + <Tab> Previous field in Input Masks
- <+> Next Option in Select fields
- <-> Previous Option in Select fields
- <SPACE> Switch in selection fields with two options only (On/Off or No/Yes)
  Only if “Allow Sharing“ is active: Apply and save data in Mask “KVM Switch“
- <RETURN> Apply and save data – in Input Masks Select option – in Menus
- <ESC> Cancel data input without saving

On-screen-Displays

Menu

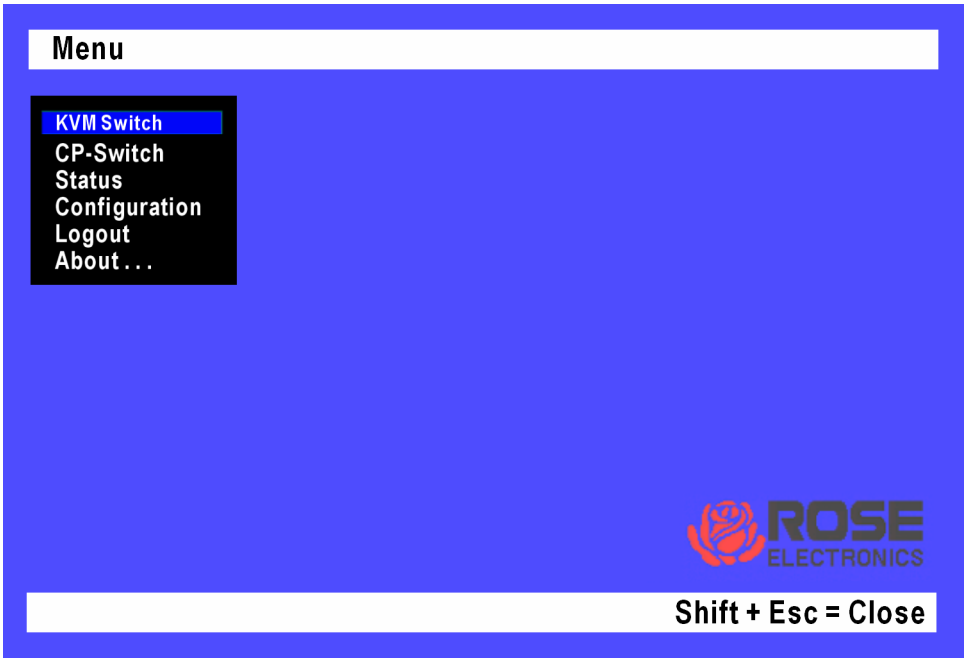
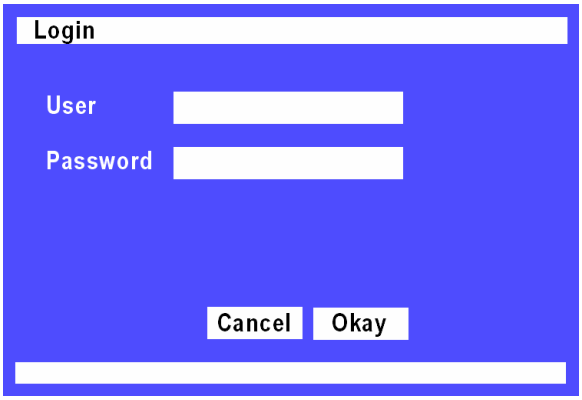


Figure 3. OSD Main Menu

Using the up and down arrow keys, select (highlight) “Configuration” and press enter. If you are not logged on to the system as the “Administrator”, the LOGIN dialog menu will display requesting a userID and Password.

Login Menu



The factory default settings for the “Login” OSD are:

User – admin
(*User and Password are case sensitive*)
Password – admin

If these settings have not been changed, enter the User and Password in the appropriate field and click on “Okay”

Upon validation, the “Configuration” menu will display as shown in figure 5.

Figure 4. Login OSD

Configuration Menu

Figure 5. Configuration menu

Using the up and down arrow keys, select “Open” and press enter. The option allows you to load a previously saved switch configuration. Up to 8 user defined switch configurations plus the default settings can be saved within the unit.
Use the up down arrow keys or the mouse to select the configuration scheme to apply and press enter.
Figure 6 shows the “Open Configuration” screen.

Configure open menu

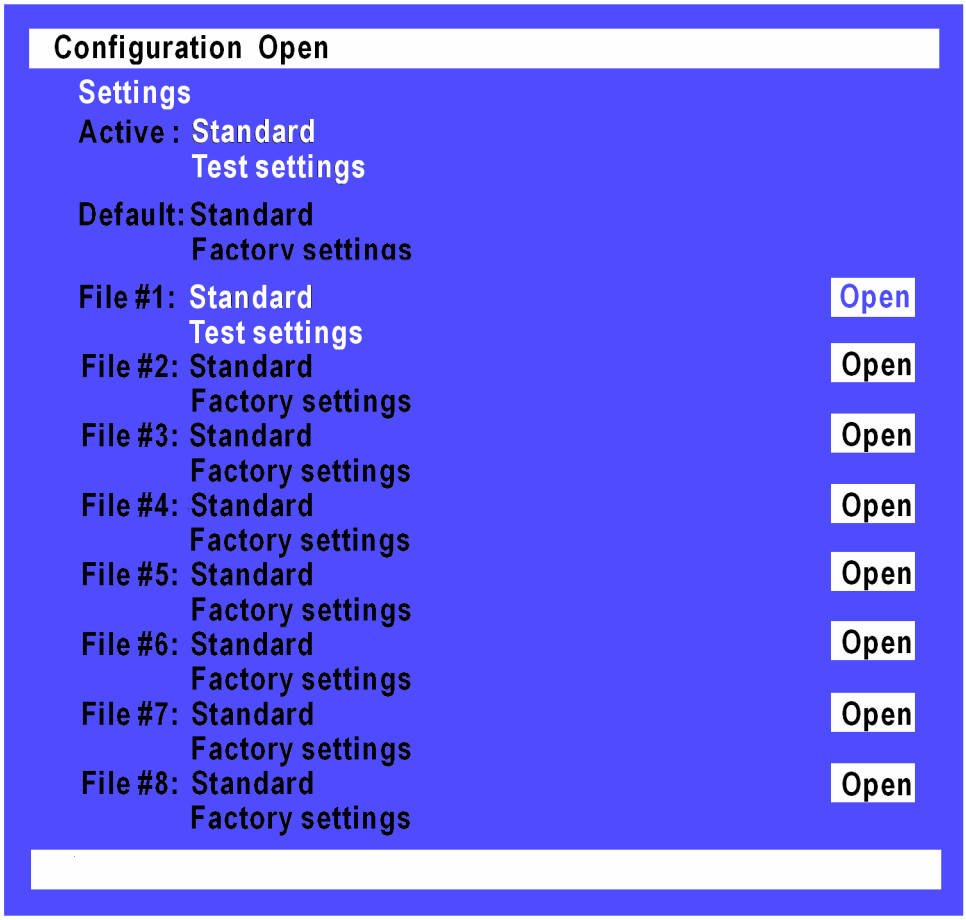


Figure 6. Open configuration file menu

From the main menu, select “System” and press enter to display the system menu. From this menu you can set-up the system, access control, switch settings, and mouse settings. Figure 7 shows this menu.

Configure system menu

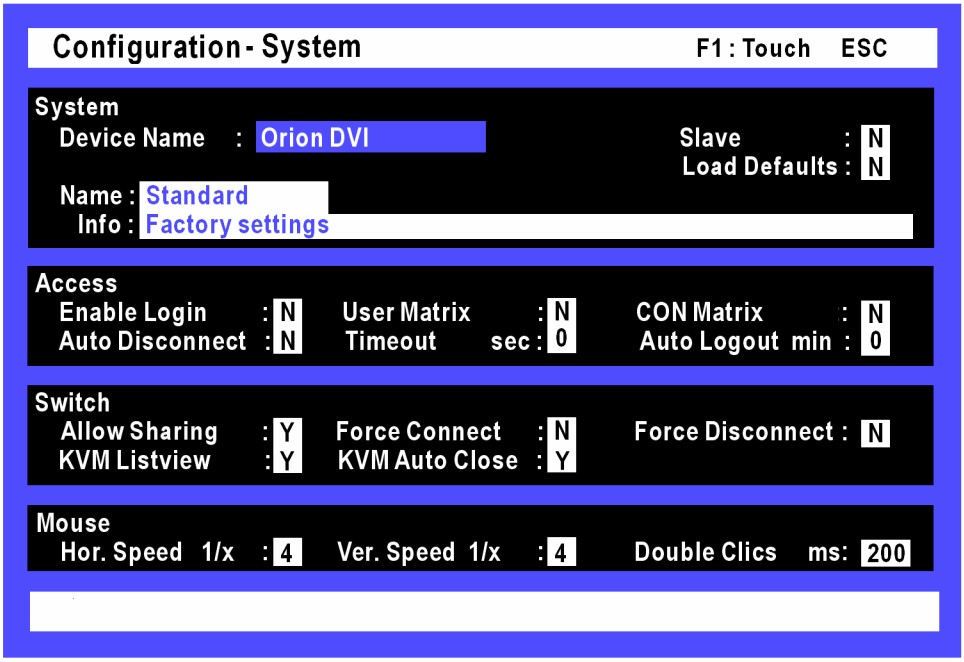


Figure 7. Configure System menu

System options

Field	Selection	Description
Name	**CHR16**	(Input) Configuration name. Used for saving the current configuration to file.
Device	**CHR16**	(Input) Device name (displayed in all menus at the lower left)
Info.	**CHR64**	(Input) Detailed information about the current configuration
Slave	**Y/N**	Y – This switch is configured according to a master switch and remotely controlled No configuration possible. N – No slave mode
Load Default	**Y/N**	Y – Upon “Power On” or “Restart” the switch will boot with the Default configuration. N – Upon “Power On” or “Restart” the switch will boot with the last configuration.
Auto Save	**Y/N**	Y – Switch saves periodically the current configuration into flash. N – No automatic saving
Enable COM Echo	**Y/N**	Y – Switch sends echoes of all performed switch commands N – No Echoes.
Lock COM Ports	**Y/N**	Y – While an OSD is open, all commands via external interfaces are rejected (LAN, serial). N – No rejection
Enable Login	**Y/N**	Y – Login required to access the OSD with user name and password. After login, the user will remain logged in until he explicitly logs out or an Auto Logout has been performed (cf. below). KVM Switching with Hot Keys requires the user to be logged in. N – No Login required.
User Matrix	**Y/N**	Y – User access restricted to CPU’s explicitly unlocked in the User Matrix. User matrix mode requires user login and implies “Enable Login“ = “Y“. KVM Switching with Hot Keys requires the user to be logged in. N –User Matrix disabled.

Access Options

Field	Selection	Description
Enable Login	**Y/N**	Y – Login required to access the OSD with user name and password. After login, the user will remain logged in until he explicitly logs out or an Auto Logout has been performed. KVM Switching with Hot Keys requires the user to be logged in. N – No Login required.
User Matrix	**Y/N**	Y – User access restricted to CPU's explicitly unlocked in the User Matrix. User matrix mode requires user login and implies "Enable Login" = "Y". KVM Switching with Hot Keys requires the user to be logged in. N – User Matrix disabled.
CON Matrix.	**Y/N**	Y – CON Port connectivity restricted to CPU's explicitly unlocked in the CON Matrix N – CON Matrix disabled
Auto Disconnect	**Y/N**	Y – Only active if "Enable Login" or „User Matrix" are activated: CON Port is disconnected from current CPU Port upon entering into the OSD. N – Current Connection is held
Timeout	**sec**	### – Time of inactivity, after which OSD is closed automatically. 0 sec – No Timeout.
Auto Logout	**min**	### – Time of inactivity, after which the user at this console is logged out from OSD access automatically. 0 min – Immediate Logout from OSD after closing the OSD.

Switch Options

Field	Selection	Description
Allow Sharing	**Y/N**	Y – User may connect to any unlocked CPU with Video Access Only. NOTE: Switch with <space> Key, no <Return>.
Force Connect	**Y/N**	Y – User may connect to any unlocked CPU with full control forcing any previous user to Video Access only. **Note: Switch with <Return> Key**. N – No Force Connect.
Force Disconnect	**Y/N**	Y – User may connect to any unlocked CPU with full control. Previous user is disconnected. **Note: Switch with <Return> Key**. N – No Force Disconnect.
KVM Listview		Y – OSD is opened with Menu "KVM List" (default) (Dynamic display of available CPU Ports). N – OSD is opened with Menu "KVM Switch" (Static display of available CPU Ports)..
KVM Auto Close	**Y/N**	Y – Immediate exit from OSD after switching CPU Port in Menu "KVM List" or "KVM Switch" with immediate display of the new CPU. N – No Auto Close

NOTE: If "Allow sharing" is activated, the current user of a CPU will not note if other users gain video access to his CPU.

Mouse Options

Field	Selection	Description
Hor. Speed	**VAL2**	Setting up the horizontal mouse speed
Ver. Speed	**VAL2**	Setting up the vertical mouse speed.
Mouse Click	**VAL3**	Setting up the time frame for "Double Click"

NOTE: Mouse settings are CON Port specific and can be adjusted for each CON Port separately.

Touch Screen settings

The Orion OSD supports touch screens.

NOTE: USB HID based Touch Screen protocols are supported.
Support of Vendor specific protocols only upon request.

To configure the touch screen feature, from the configure System menu, press the <F1> key. The touch screen calibration window will display as shown in figure 8.

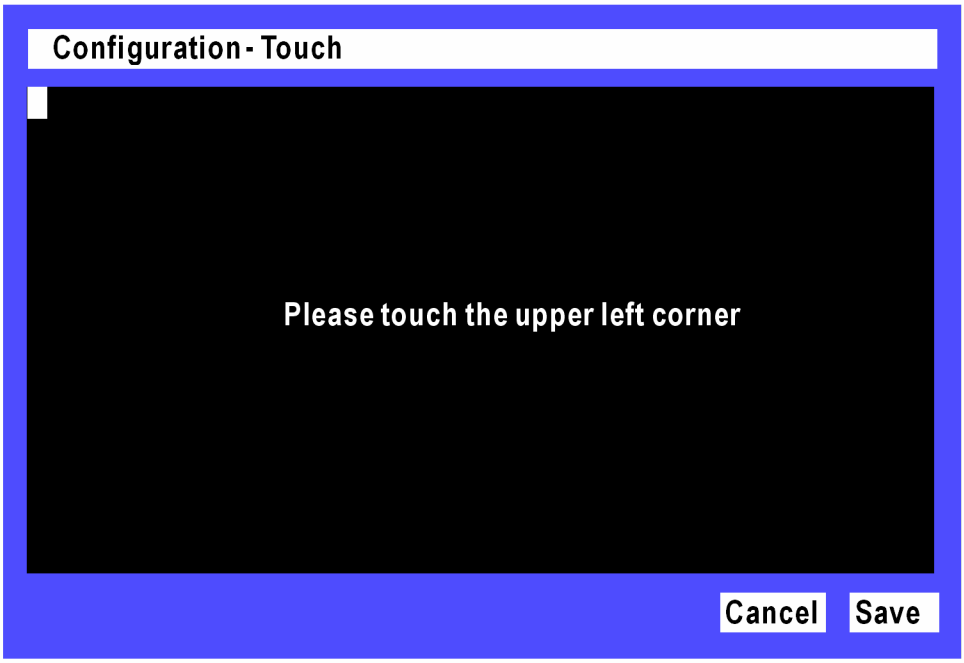


Figure 8. Touch screen calibration

On the touch screen calibration display, touch the upper left of the screen twice, then at the lower right.
test the calibration results and cancel or save the calibration.
This calibration is CON Port specific and must be repeated for each touch screen at its CON Port.

Touch Control

Control by touch is mostly similar to mouse control. Confirmation of a selection is performed by a second touch instead of double click.

Configure user

To configure the users of the Orion switch, select the option “User” in the “Configuration” menu by using the cursor buttons and press enter. The “User” mask will display full screen as shown in figure 9.
In this menu, you can setup user names and privileges.

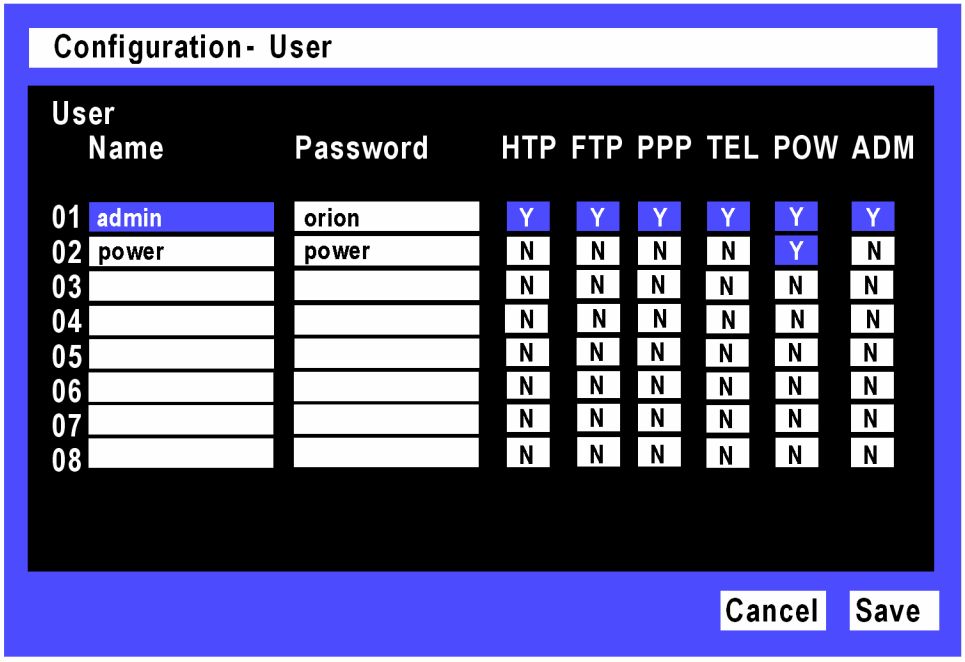

Configuration - User
User
Name
Password
HTP FTP PPP TEL POW ADM
01 admin orion Y Y Y Y Y Y
02 power power N N N N Y N
03 N N N N N N
04 N N N N N N
05 N N N N N N
06 N N N N N N
07 N N N N N N
08 N N N N N N
Cancel
Save

Figure 9. Configure User menu

Field	Type	Description
Name	CHR16	User Name (case-sensitive)
Password	CHR16	User Password (case-sensitive)
HTP	Y/N	User may login and access via HTTP
FTP	Y/N	User may login and access via FTP
PPP	Y/N	User may login and access via ‚Internet’ (not available)
TEL	Y/N	User may login and access via Telnet
POW	Y/N	User is ‚Power-User’ and may activate e.g. the CrossPoint Mode
ADM	Y/N	User is Administrator and may change the configuration or activate the CrossPoint Mode

User Matrix Configuration

Select the option “User Matrix” in the “Configuration” menu by using the cursor buttons and press <RETURN>.

The “User Matrix” mask is displayed full screen as shown is figure 10.

In this menu, the administrator can define for each user a specific set of CPU’s that this user is authorized to connect to. If the option “User Matrix” is active, any switching requires the user to be logged in. Only then, switching by Hot keys will be supported. The below example shows user #01 has access to CPU_01, CPU_02, and CPU_04.

To assign a user access to a CPU port, select the CPU port to assign and press <Return>. The CPU port will highlight and the user has access to that CPU port.

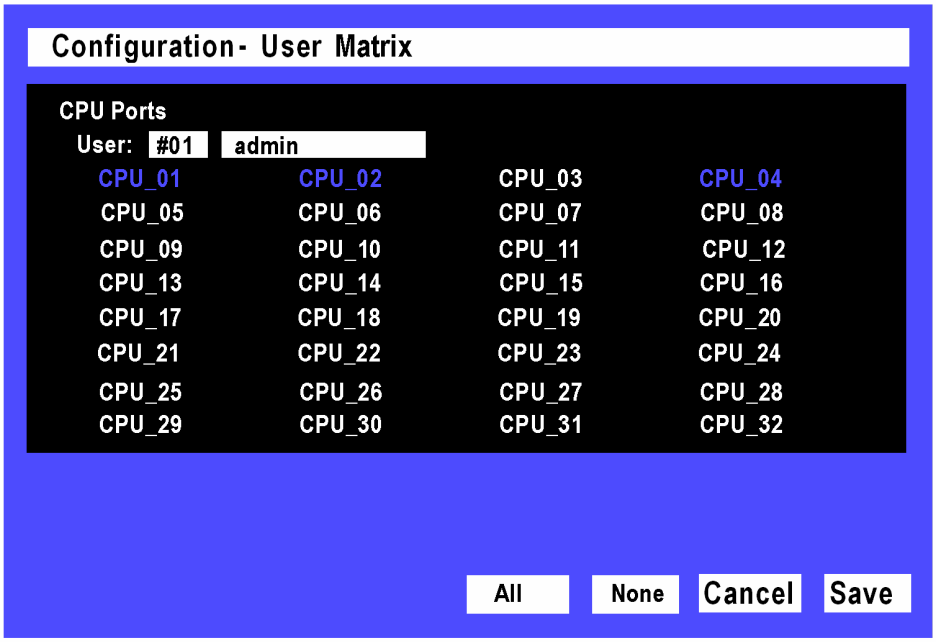


Figure 10. User Matrix Menu

Key Control	Description
<Page up>	Page up to previous user
<Page down>	Page down to next user
<Cursor left>	Move to left field
<Cursor right>	Move to right field
<Cursor up>	Line up
<Cursor down>	Line down
<Tab>	Next field
<Shift> + <Tab>	Previous field
<SPACE>	Release selected CPU-Port for selected User
<RETURN>	Apply and save data
<ESC>	Back to “Configuration” Menu

NOTE:
The User Matrix configuration and the Console Matrix configuration work together to grant access to a CPU port. Both the User Matrix configuration for a user and the Console Matrix configuration must grant access to a CPU port. If the User Matrix grants access to CPU port #2 but the Console Matrix does not grant access to CPU port #2, access is denied.

CON Port Configuration

Select “CON Ports” in the “Configuration” menu and press <RETURN>.
The “CON Ports” mask will displayed full screen as shown in figure 11.
This menu allows the administrator to define for each CON Port the name, the type, the OSD resolution, and the connected CPU.

Please note the following guidelines for type selection:

- Single-Head Ports and USB 2.0 Ports can be switched separately.
- Dual-Head Ports, Quad-Head Ports, Single-Head/USB 2.0 Ports and Triple-Head/USB 2.0 Ports are always switched in parallel.
- Only odd Port numbers (#01, 03, 05, etc.) may be configured as Dual-Head Ports or Single-Head/USB 2.0 Ports.
- Only every fourth Port (#01, 05, 09, etc.) may be configured as Quad-Head Port or Triple-Head/USB 2.0 Port.
- Only the first CON-Port can be switched by Hotkeys, all other Ports behave like Slaves.
- If you switch from a Multi-Head CPU-Port to a differently configured CPU Port, one or more monitors may remain dark.
- If the user switches from an Quad-Head Console to a ,Single-Head CPU Port, all other three monitors will remain dark.
- If the user switches from an Quad-Head Console to a ,Dual-Head CPU Port, the last two monitors will remain dark.
- If the user at a Triple-Head/USB 2.0 Console switches to a Single-Head/USB 2.0 CPU Port, two monitors will remain and the USB-Port remains inactive.
- If the user at a Single-Head/USB 2.0 Console switches to a Single-Head CPU Port with a subsequent USB 2.0 CPU Port, the USB Port still remains inactive.

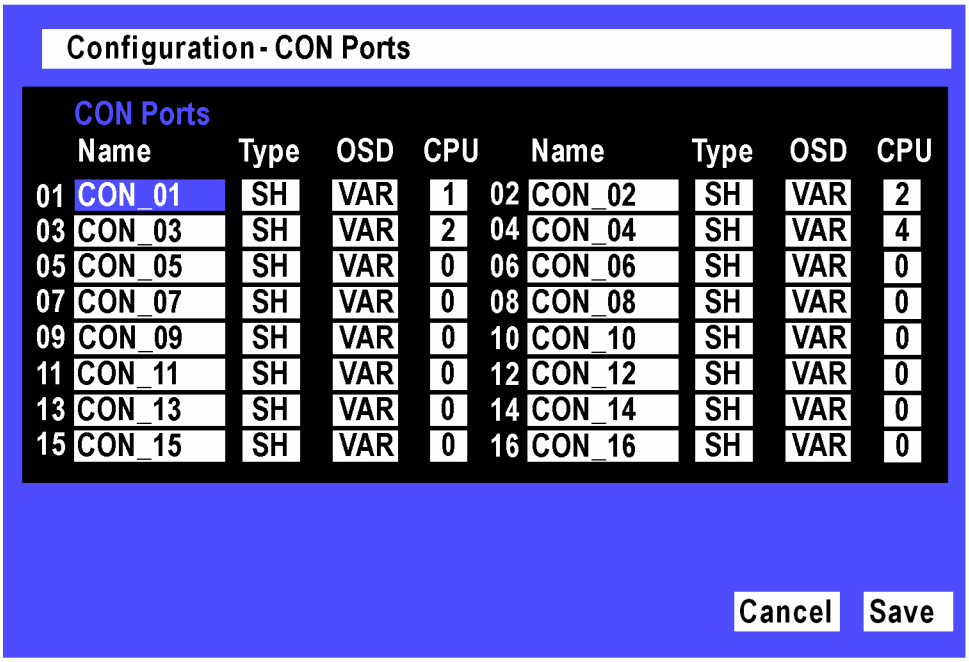

Configuration - CON Ports
CON Ports
Name Type OSD CPU Name Type OSD CPU
01 CON_01 SH VAR 1 02 CON_02 SH VAR 2
03 CON_03 SH VAR 2 04 CON_04 SH VAR 4
05 CON_05 SH VAR 0 06 CON_06 SH VAR 0
07 CON_07 SH VAR 0 08 CON_08 SH VAR 0
09 CON_09 SH VAR 0 10 CON_10 SH VAR 0
11 CON_11 SH VAR 0 12 CON_12 SH VAR 0
13 CON_13 SH VAR 0 14 CON_14 SH VAR 0
15 CON_15 SH VAR 0 16 CON_16 SH VAR 0
Cancel
Save

Figure 11. CON port configuration

Field	Type	Description
Name	CHR16	Name of the CON port connected to this CPU port
Type	SELECT	SH = Single-Head Port DH = Dual-Head Port QH = Quad-Head Port 0U = USB 2.0 Port 1U = Single-Head Port with USB 2.0 Port 3U = Triple-Head Port with USB 2.0 Port
OSD	SELECT	VAR = OSD embedded in current resolution 800 = OSD with full screen resolution (800x600) 1024 = OSD with full screen resolution (1024x768) 1280 = OSD with full screen resolution (1280x1024) 1600 = OSD with full screen resolution (1600x1200) 1920 = OSD with full screen resolution (1920x1200)
CPU	VAL2	No. of CPU Port connected to this Console (Status) or. to be connected by <SAVE>

CON Matrix Configuration

Select the option “CON Matrix” in the “Configuration” menu and press <RETURN>.
The “CON Matrix” mask is displayed full screen as shown in figure 12.
This menu allows the administrator to define for each console a specific set of CPU’s that this Console can connect to. To assign a CPU to a CON port, select the CPU port and press return to highlight the selected CPU port. Select all CPU ports that this Console can access. When completed, “Save” the selections.

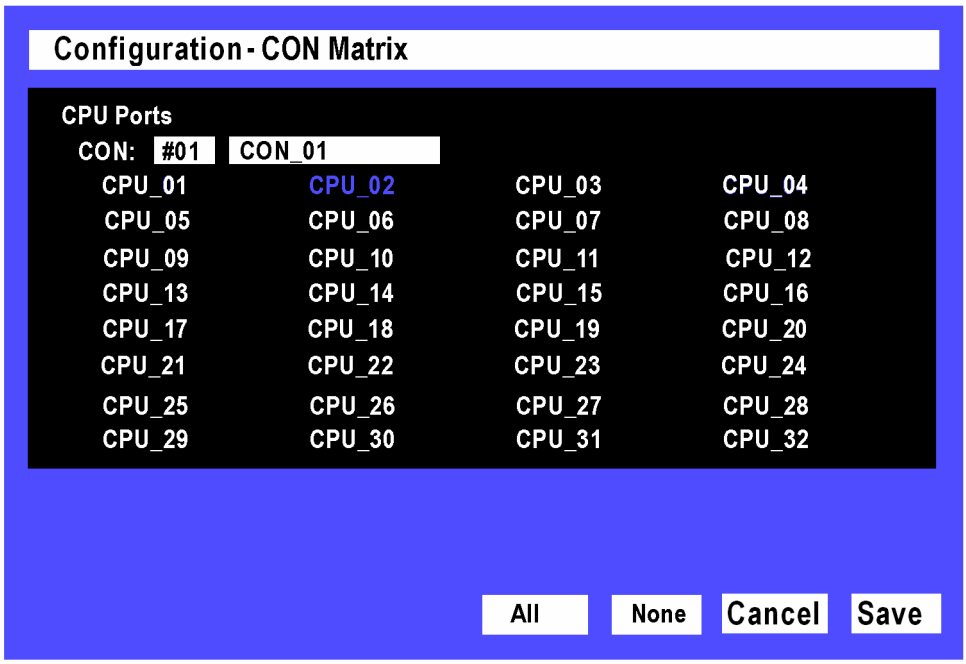


Figure 12. CON Matrix Configuration

Keyboard Control	Description
<Page up>	Page up to previous CON Port
<Page down>	Page down to next CON Port
<Cursor left>	Move to left field
<Cursor right>	Move to right field
<Cursor up>	Line up
<Cursor down>	Line down
<Tab>	Next field
<Shift> + <Tab>	Previous field
<SPACE>	Release selected CPU-Port for selected CON Port
<RETURN>	Release selected CPU-Port for selected CON Port, apply and save data
<ESC>	Back to upper Menu

CPU Port Configuration

Select the option “CPU Ports” in the “Configuration” menu and press <RETURN>.
The “CPU Ports” mask is displayed full screen as shown in figure 13.
This menu allows the administrator to define, for each CPU Port, the name, the type, and the connected CON Port.

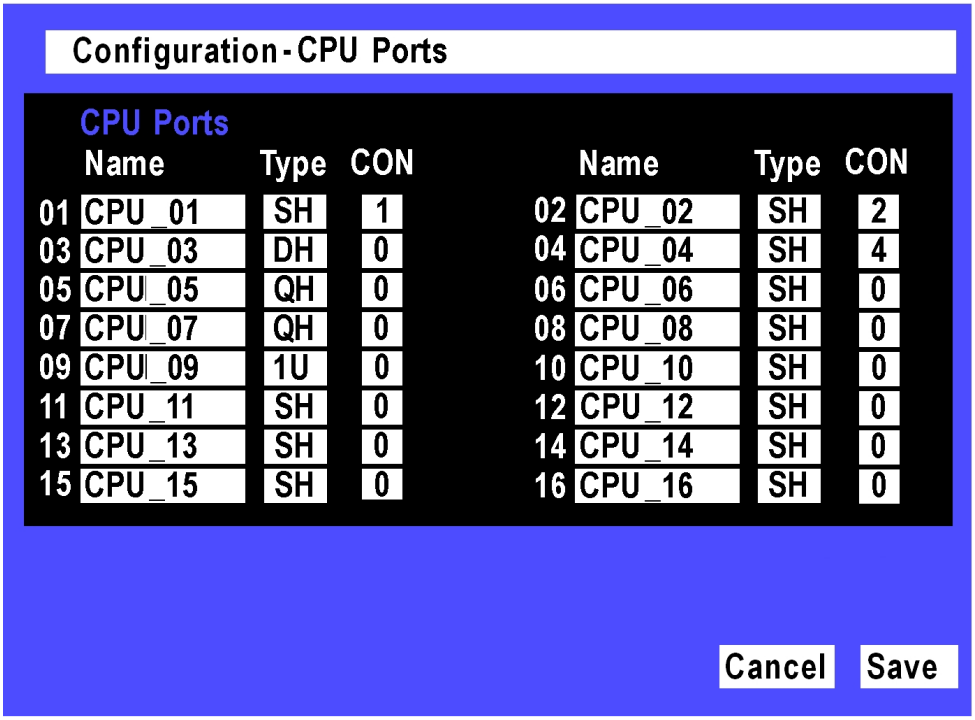

Configuration - CPU Ports
CPU Ports
Name Type CON Name Type CON
01 CPU_01 SH 1 02 CPU_02 SH 2
03 CPU_03 DH 0 04 CPU_04 SH 4
05 CPU_05 QH 0 06 CPU_06 SH 0
07 CPU_07 QH 0 08 CPU_08 SH 0
09 CPU_09 1U 0 10 CPU_10 SH 0
11 CPU_11 SH 0 12 CPU_12 SH 0
13 CPU_13 SH 0 14 CPU_14 SH 0
15 CPU_15 SH 0 16 CPU_16 SH 0
Cancel
Save

Figure 13. CPU Port Configuration

Field	Type	Description
Name	CHR16	Name of the CPU connected to this port
Type	SELECT	SH = Single-Head Port DH = Dual-Head Port QH = Quad-Head Port 0U = USB 2.0 Port 1U = Single-Head Port with USB 2.0 Port 3U = Triple-Head Port with USB 2.0 Port
CON	VAL2	No. of CON Port connected to this CPU (Status) or to be connected by <SAVE>

Status Information

Enter the OSD with key sequence <Ctrl>+ <Shift>+ <O> (Letter ‚o') The "KVM List" Mask is displayed full screen (If Option "Listview" is not active, "KVM Switch" Mask will be displayed instead).
Leave the "KVM List" Mask by hitting <ESC>
Select the menu option "Status" and press <RETURN>
The "Status" mask will displayed full screen as shown in figure 14.

Figure 14. Status menu

Status Display – CON ports

Using the up / down arrow keys, select CON ports and press <Return>. The Console Port status screen will display as shown in figure 15.

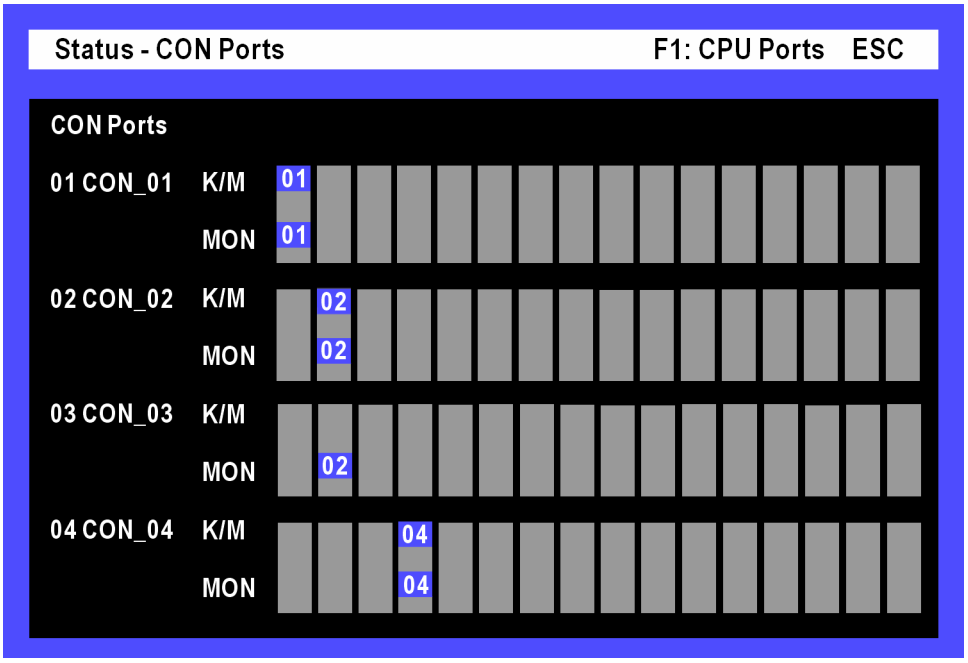


Figure 15. Status - CON ports

Select the option “CON Ports” in the “Status” menu and press <Return>. The CON status mask will display. The status view will show which console has connections to which CPU. Pressing the ‘F1’ key switches to the “CPU Port view”.

Key Command	Description
<Page up>	Page up in Input-/Status Masks with several pages
<Page down>	Page down in Input-/Status Masks with several pages
<F1>	Switch to the CPU Port Status Display
<ESC>	Return to “Status“ Mask

Status Display – CPU ports

Select the option “CPU Ports” from the “Status” menu and press <RETURN>.
The “Status – CPU Ports” mask is displayed full screen as shown in figure 16.

This status view shows which CPU is connected to which console.

Pressing the ‘F1’ key switches to the “CON Port view”.

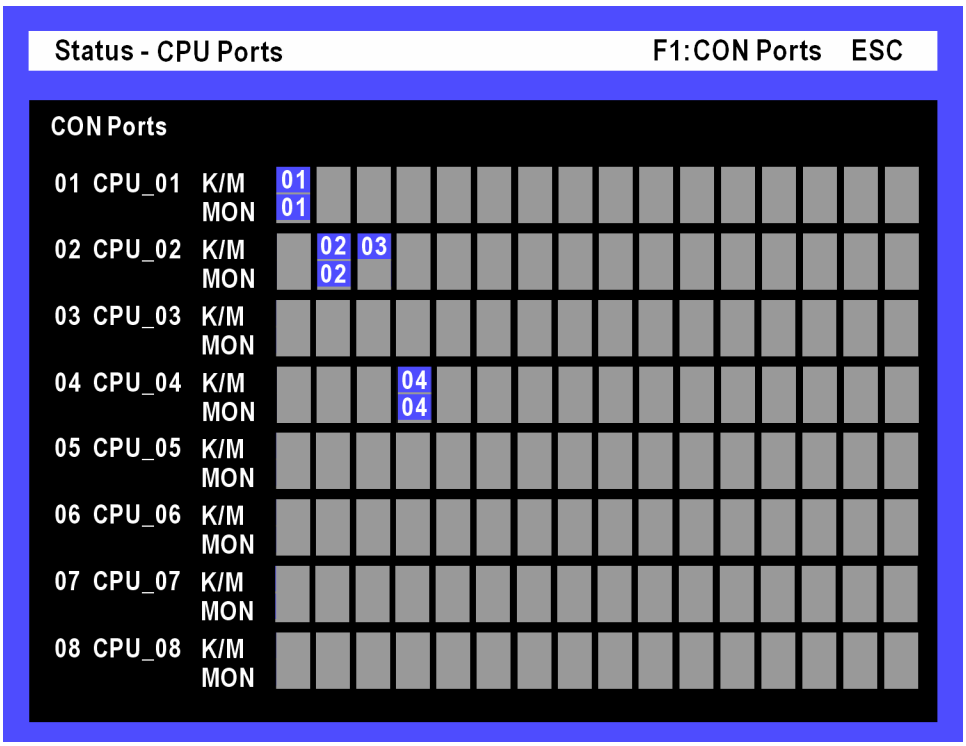


Figure 16. Status – CPU Ports

Key Command	Description
<Page up>	Page up in Input-/Status Masks with several pages
<Page down>	Page down in Input-/Status Masks with several pages
<F1>	Switch to the CON Port Status Display
<ESC>	Return to “Status“ Mask

Status Display – Network

Network functionality is in development at this time.

Status Display – Firmware

Select Firmware from the status menu and press <Return>. The firmware status display will display showing the firmware versions of the currently installed boards in the unit.

Use the page up and page down keys to view both screens.
Press ESC to return to the Status Menu.

OPERATION – KVM MODE

Operating the Orion Unit

The Orion™ unit can be operated in three different ways:
a) Instant Switching:
- By means of a standard keyboard connected to a console port and hot keys
- By means of a macro keyboard connected to a console port (See Appendix E)

b) Via Input Masks:
- By means of a standard keyboard connected to a console port and the OSD
- By means of a PC, a Browser and the web interface
- By means of a PC, a dedicated utility and the serial interface

In all operation modes, the same masks are generated and displayed. Accordingly, the switching is similar, independent from the method of access.

c) Via external switch commands:
- By means of the network interface
- By means of the serial interface

HOT Key switching

Instant Switching with Keyboard Hot Keys is the fastest way for a user to switch between various CPU's.
By hitting <Ctrl>+ <Shift>+ <I> (Letter "I") the Hotkey Mode is activated: the Shift-Lock- and Scroll-LED will flash indicating that you are in the command mode. Enter the CPU port number to switch to and press <Return>.

Instantaneously, the Keyboard LED's stop flashing, the Hotkey Mode is terminated and the new CPU is connected to the console.

Note-:
With Hotkeys you can only switch to available or accessible CPU's. The Options "Force Connect" and "Force Disconnect" as well as access permissions defined by "User Matrix" and "CON Matrix" are considered.

Hotkeys are only supported, if neither the option "Enable Login" or the option "User Matrix" are selected OR if the user is logged into the OSD.

OSD / KVM mode switching

In the KVM Mode, the user can only switch his own console. To control other consoles, please refer to the Crosspoint switch section.

KVM-List mask switching

The KVM-List mask displays when you first initiate the OSD (Ctrl + Shift + o). In this mask, all CPU Ports are displayed that are currently accessible to the current user at this console.

All constraints given by CPU Ports already connected to other consoles as well as access restrictions imposed by the User Matrix or by the Console Matrix are considered. Constraints given by CPU Ports already connected may be overwritten if “Allow Sharing“, “Force Connect“ and/or “Force Disconnect“ have been selected.

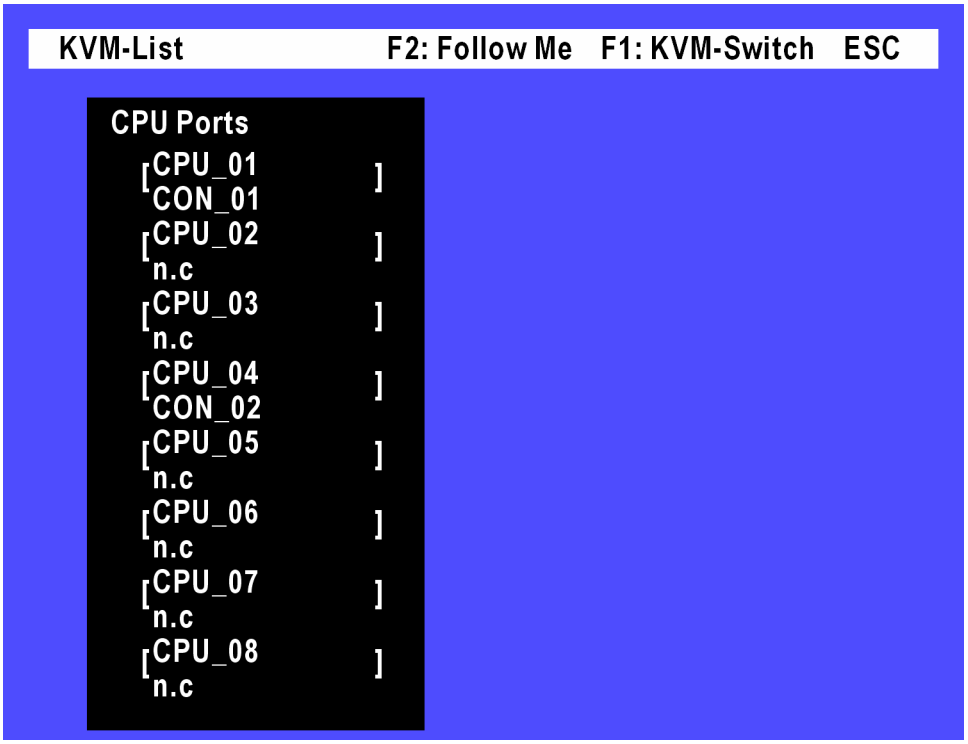


Figure 17. KVM-List menu

The CPU_xx and CON_xx text on this screen will provide you information about the connection by using the following color scheme.

CPU Port	CON Port	Description
Green	n.c	CPU port not connected Video may be shared to other consoles
Green	Yellow	CPU Port not connected Video shared to own console
Yellow	Yellow	CPU Port connected to own console
Red	Red	CPU port connected to other console
Red	Yellow	CPU port connected to other console Video shared to own console

Keyboard Commands

<Cursor up>	Line up
<Cursor down>	Line down
<Tab>	Next field
<Shift> + <Tab>	Previous field
<SPACE>	Select CPU Port Video only (Only if „Allow Sharing“ active or CPU available)
<RETURN>	Select CPU Port Video and Control
<F1>	Select “KWM-Switch“ Mask
<F2>	Select “FollowMe“ Mask
<ESC>	Back to upper Menu

With a mouse or Touch screen the user can select a CPU Port Video only if the CPU Port is already connected to another Console and neither “Force Connect“ nor “Force Disconnect“ have been selected. In all other cases he will have full control of the selected CPU port.

KVM-Switch mask switching

Unlike the KVM-List mask that shows only the CPU ports that are accessible based on the User Matrix and Console Matrix set-up, the KVM-Switch mask shows all CPU Ports regardless of their accessibility. To switch to a CPU port, select (highlight) the port and press the <SPACE> bar. This will switch the video only to your COM port. Selecting a CPU port and pressing the <RETURN> key will switch the video and control to your COM port.

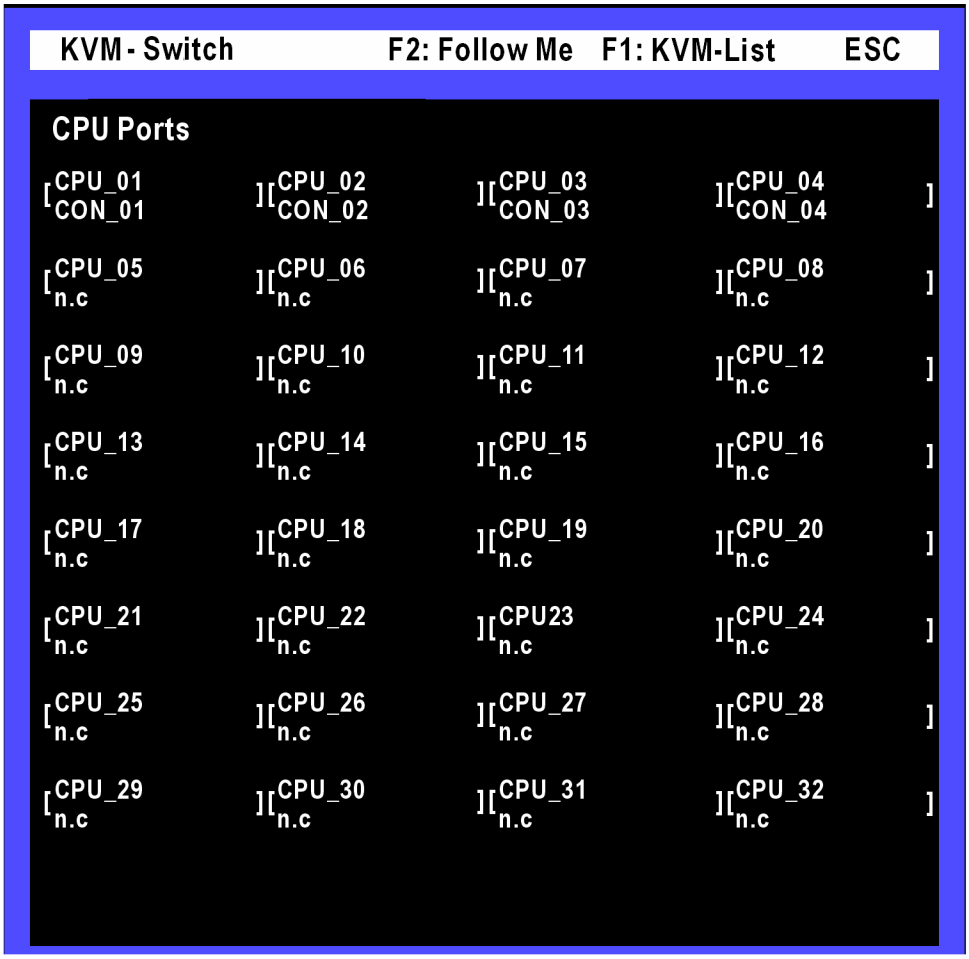


Figure 18. KVM-switch mask

The CPU_xx and CON_xx listing on this screen will provide you information about the connection by using the following color scheme.

CPU Port	CON Port	Description
Green	n.c	CPU port not connected Video may be shared to other consoles
Green	Yellow	CPU Port not connected Video shared to own console
Yellow	Yellow	CPU Port connected to own console
Red	Red	CPU port connected to other console
Red	Yellow	CPU port connected to other console Video shared to own console
Blank	n.c	CPU Port not available

Keyboard Commands

<Cursor left>	Cursor left
<Cursor right>	Cursor right
<Cursor up>	Line up
<Cursor down>	Line down
<Tab>	Next field
<Shift> + <Tab>	Previous field
<SPACE>	Select CPU Port Video only (Only if “Allow Sharing“ active or CPU available)
<RETURN>	Select CPU Port Video and Control
<F1>	Select “KWM-Switch“ Mask
<F2>	Select “FollowMe“ Mask
<ESC>	Back to upper Menu

With a mouse or Touch screen the user can select a CPU Port Video only if the CPU Port is already connected to another Console and neither “Force Connect“ nor “Force Disconnect“ have been selected. In all other he will have full control of the selected CPU port.

Follow-Me function

The Follow Me function allows you to display the contents of your monitor to one or more CON ports. Pressing the <F2> key from the KVM-List or KVM-Switch menu will display the below screen. The Follow Me display shows the current connection status. Select the CON ports to display your monitor on and press <RETURN>. The display of the computer you are connected to will display on the CON monitors you have selected. If you switch CPU ports, the FOLLOW ME connections will also switch and display the video from the new CPU port.

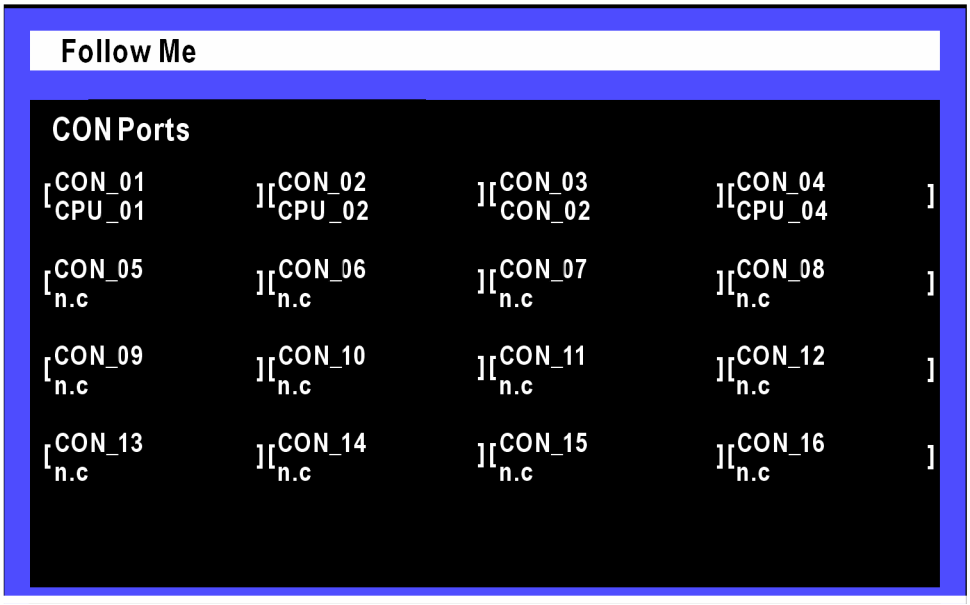

Follow Me
CON Ports
[CON_01 CPU_01][CON_02 CPU_02][CON_03 CON_02][CON_04 CPU_04]
[CON_05 n.c][CON_06 n.c][CON_07 n.c][CON_08 n.c]
[CON_09 n.c][CON_10 n.c][CON_11 n.c][CON_12 n.c]
[CON_13 n.c][CON_14 n.c][CON_15 n.c][CON_16 n.c]

Figure 19. Follow Me mask

The CPU_xx and CON_xx listing provide you information about the connection by using the following color scheme.

CPU Port	CON Port	Description
Green	n.c	Available CON port
Red	Red	CON Port # connected to PCU Port # or to CON Port # in “Follow-Me” mode
Black	Black	Own CON port connection
Black	n.c	CON Port not available

Keyboard Commands (Follow-Me mode)

<Cursor left>	Cursor left
<Cursor right>	Cursor right
<Cursor up>	Line up
<Cursor down>	Line down
<Tab>	Next field
<Shift> + <Tab>	Previous field
<RETURN>	Select CON Port for “Follow Me”
<F1>	Select “KVM-Switch“ Mask
<F2>	Select “Follow-Me“ Mask

<ESC> Back to upper Menu

The function can be used to:

- Showing the contents of your display to other workstations.
- Display a presentation on a projector
- Presenting a controlled display to control rooms

Cross Point Switch Mode (COM mask)

Installation for the Cross-Point mode is exactly the same as the KVM-switch mode installation. All CPU's connect to a KVM transmitter and all user stations (Console stations) connect to a KVM receiver. Receiver and transmitter connect to the Orion using CATx or fiber cables. See figure 2 for an example of the installation.

Enter the OSD with key sequence <Ctrl>+ <Shift>+ <O> (Letter ‚o') □ The "KVM List" Mask is displayed full screen (If Option "Listview" is not active, "KVM Switch" Mask will be displayed instead). Exit the "KVM List" Mask by hitting <ESC>. The "Menu" will displayed full screen. Select the menu option "CP-Switch"and press <RETURN>.
If you are not logged into the OSD as Power User, the LOGIN Dialog will displayed. Login as a power user and the Crosspoint Switch menu as shown in figure 20 will display.

In the Crosspoint Mode any CON Port can be connected to any CPU Port. The Video signal of a CPU Port can be connected to several CON Ports, but the Keyboard/Mouse signal of a CPU can only be connected to one CON port and must be connected to a CON Port which also receives the video signal of this CPU Port.

In the CP mode, any existing connection can be overwritten. Therefore, this mode is only available for power users. For utmost flexibility, no user restriction checks are performed. Admissibility of configuration remains the responsibility of the user!

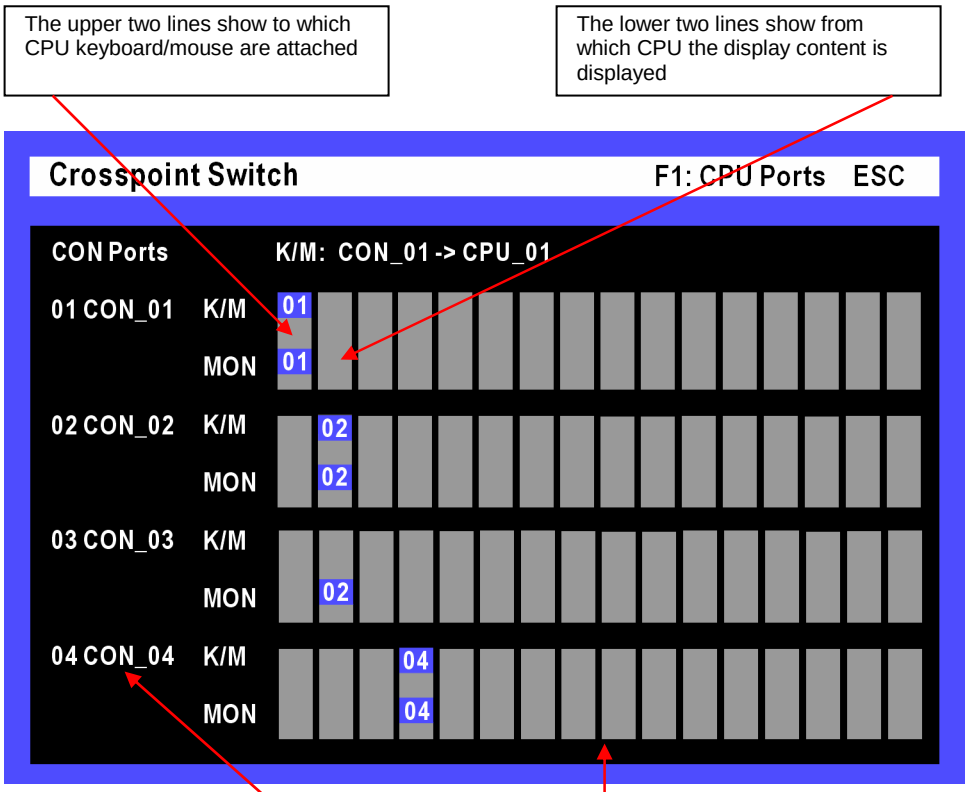

The upper two lines show to which CPU keyboard/mouse are attached
The lower two lines show from which CPU the display content is displayed
Crosspoint Switch
F1: CPU Ports ESC
CON Ports
K/M: CON_01 -> CPU_01
01 CON_01 K/M
MON
02 CON_02 K/M
MON
03 CON_03 K/M
MON
04 CON_04 K/M
MON
01
02
04
The rows correspond to the 16 CON ports
The columns correspond to the 32 CPU ports (2 lines with 16 ports each)

Figure 20. Crosspoint Switch menu (CON Mask)

To each CON Port, only 1x monitor and 1x keyboard/mouse (K/M) may be assigned. If another CPU is selected (K/M or Monitor), any existing assignment of this CON Port is released.

To each CON Port, you may assign only 1x monitor without keyboard/mouse (K/M). If you assign 1x K/M, however, you **must** assign the corresponding monitor as well!

Assignment of a single signal (K/M or MON) is performed by <SPACE>. Assignment of both K/M and MON is performed by <RETURN>. Any assignment is performed immediately. Existing assignments are cancelled.

Keyboard Commands:

<Cursor left>	Cursor left	Select CPU Port to the left
<Cursor right>	Cursor right	Select CPU Port to the right
<Cursor up>	Line above	Select keyboard/mouse for current User Port or Select monitor for User Port one line above
<Cursor down>	Line below	Select monitor for current User Port or Select keyboard/mouse for User Port one line below
<RETURN>	Confirm selected monitor AND keyboard/mouse assignment (for CPU / User Port at cursor position). **Attention:** Switch command is executed immediately	
<SPACE>	Confirm selected monitor OR keyboard/mouse assignment (for CPU / User Port at cursor position). **Attention:** Switch command is executed immediately – No plausibility check – Admissibility of configuration under responsibility of the user!	
<ESC>	Return to “Menu”	

Cross Point Switch Mode (CPU mask)

To enter the Crosspoint switch CPU mask, press the F1 key from the COM mask menu. The menu shown in figure 21 will display.

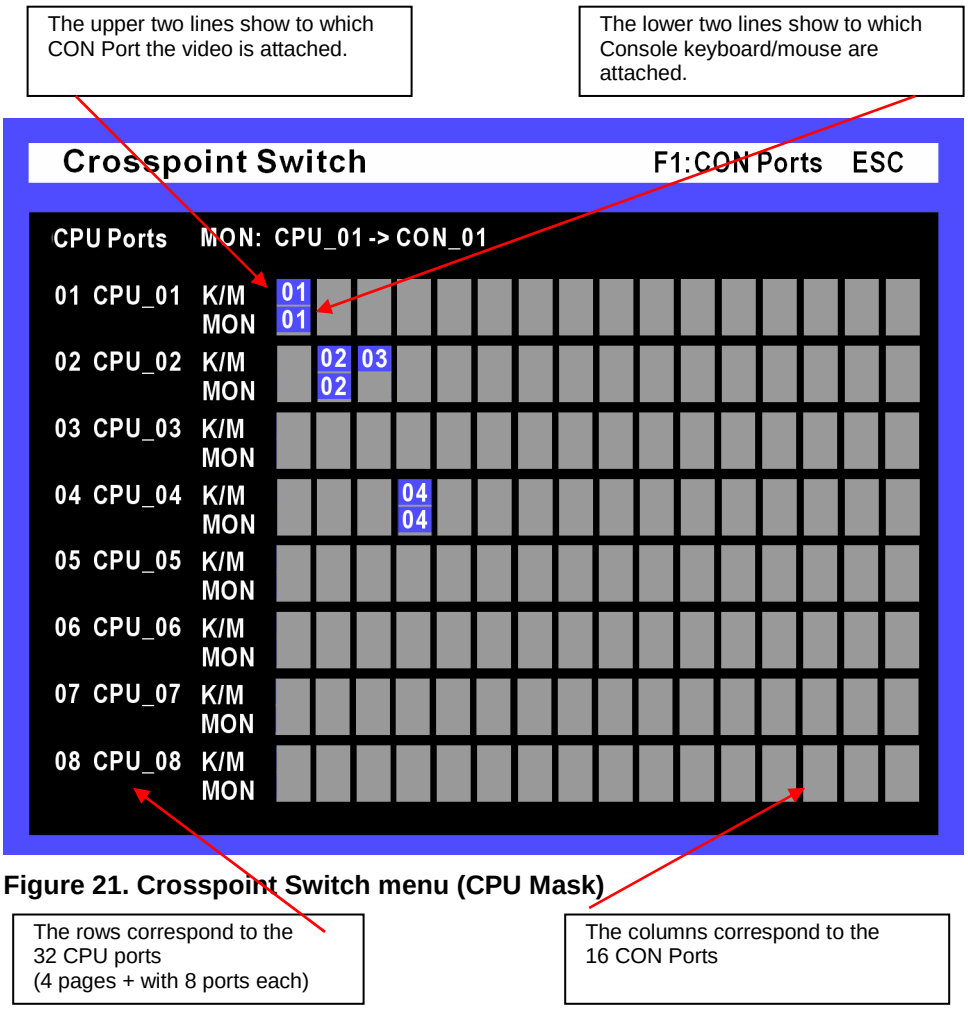


Figure 21. Crosspoint Switch menu (CPU Mask)

Any number of monitors can be assigned to each CPU but only one keyboard/mouse

Keyboard Commands:

<Cursor left>	Cursor left	Select User Port to the left
<Cursor right>	Cursor right	Select User Port to the right
<Cursor up>	Line above	Select monitor for current CPU Port or Select keyboard/mouse for CPU Port one line above
<Cursor down>	Line below	Select keyboard/mouse for current CPU Port or Select monitor for CPU Port one line below
<RETURN>	Confirm selected monitor AND keyboard/mouse assignment (for CPU /User Port at cursor position). Attention: Switch command is executed immediately	
<SPACE>	Confirm selected monitor OR keyboard/mouse assignment (for CPU /User Port at cursor position). Attention: Switch command is executed immediately	
<F1>	Switch to ‚CON Ports' Mask	
<ESC>	Return to Select Menu	

Switching using a Browser / Web Interface

The Web Interface is under development.
In Browser mode, switching will be designed to perform similarly to the **Switching in OSD / Crosspoint Mode**.
Similar masks are generated and displayed.

Switching using a Serial Interface

The Orion™ provides full Crosspoint switching functionality via Serial Interface.
Serial switching commands allow switching of video only, K/M only and bidirectional switching. Additional Commands allow loading, saving and defining the complete switch matrix in one step.
All available serial switching commands are listed in **Appendix D: Serial Interface.**

Operating modes - Overview

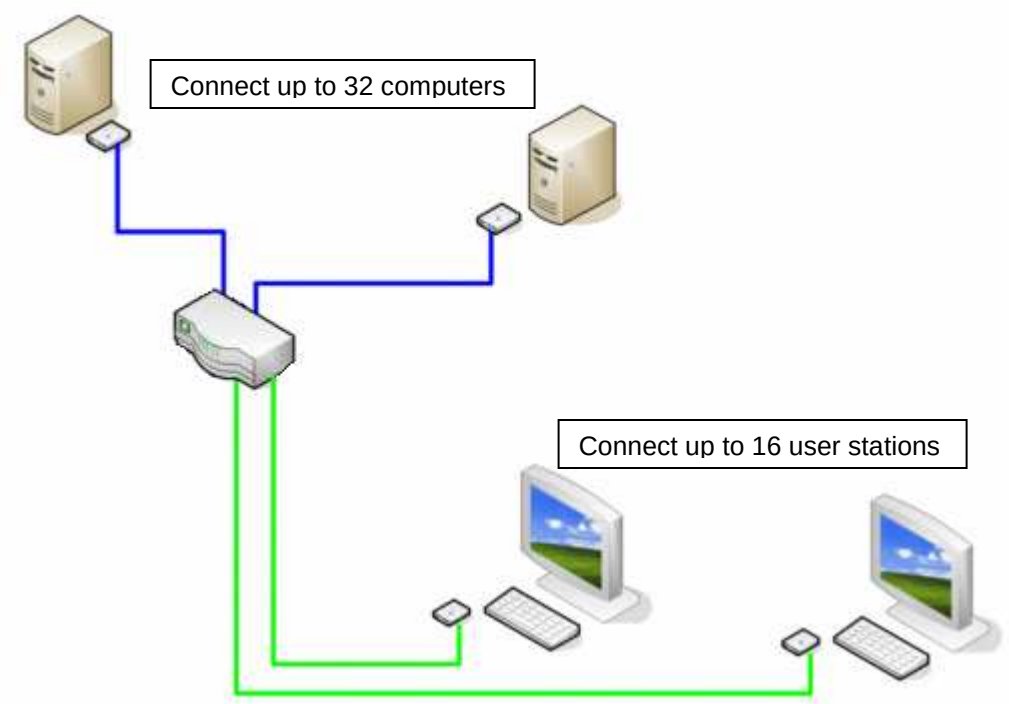
The Orion™ provides full flexibility for configuration of your Switch environment. One part can be configured as Single-Head Ports, another part as Dual-Head- or even Quad-Head Ports. You can also mix configurations of KVM and USB2.0 ports.

With the “Follow-Me” function, you can copy your own display content to one or more additional monitors. If a presentation shall be displayed concurrently on a projector

In each operating mode, the device can be controlled like a “Crosspoint Switch”’. This functionality can be used to perform all switch activity from one single workplace or to set up specific configurations which are not allowed in regular operating modes. This is the only possible operating mode for pure video switching environments.

Single-Head KVM switch mode

In the Single-Head Mode up to 16 users can access up to 32 CPUs. NON-Blocking Access for all users is granted, i.e. none of the users is constrained by the activity of another user.



Single-Head KVM-Switch

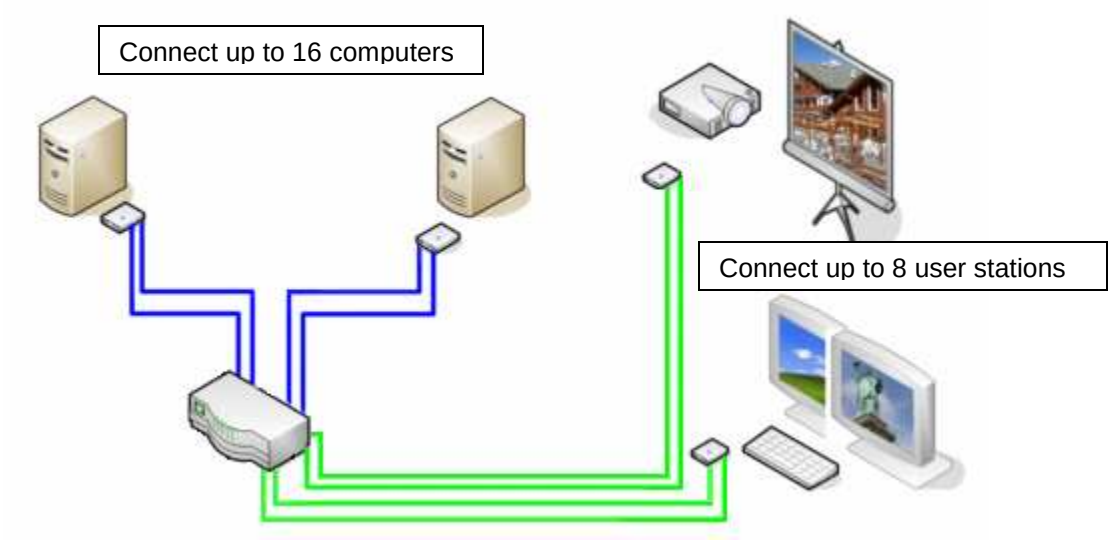
Using the OSD, each user can select the CPU that he wants to connect to. The OSD display shows if the CPU has already been assigned to another user. Depending on the switch configuration, access to this CPU Port will be denied or the former user will be replaced by the new user.

Depending on the switch configuration, access to the OSD is possible at any time or is requiring an authentication. With the authentication, access to CPU Ports and/or User Ports can further be restricted by assigning specific user levels. Alternatively, the user can be assigned to one or more user groups with access to a defined set of CPU Ports and/or User Ports.

With the “Follow-Me” function, you can copy your own display content to one or more additional monitors.
From a Single-Head User Port you might also access a Dual-Head- or Quad-Head- CPU.
Operation, however, is limited to the first monitor in this case.

Dual-Head KVM switch mode

In Dual-Head Mode up to 8 Users can access up to 16 CPUs. NON-Blocking Access for all users is granted, i.e. none of the users is constrained by the activity of another user.



Dual-Head KVM-Switch

Using the OSD, each user can select the CPU that he wants to connect to. The OSD display shows if the desired CPU has already been assigned to another user. Depending on the switch configuration, access to this CPU Port will be denied ort he former user will be replaced by the new user.

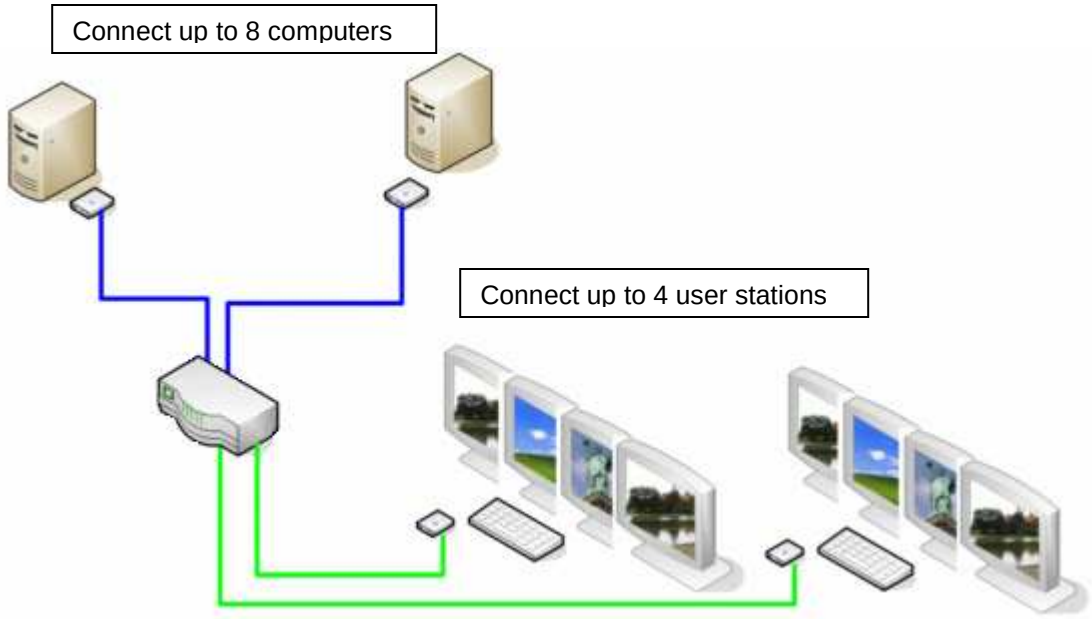
Depending on the switch configuration, access to the OSD is possible at any time or requires authentication. With the authentication, access to CPU Ports and/or User Ports can further be restricted by assigning specific user levels. Alternatively, the user can be assigned to one or more user groups with access to a defined set of CPU Ports and/or User Ports.

With the “Follow Me” function, you can copy your own display content to one or more additional monitors.

From a Dual-Head User Port you might also access a Single-Head- or Quad-Head- CPU. With a Single-Head CPU, the second monitor will remain dark (not connected) and with a Quad-Head CPU, operation is limited to the first or second monitor.

Quad - Head KVM switch mode

In Quad-Head Mode up to 4 Users can access up to 8 CPUs. NON-Blocking Access for all users is granted, i.e. none of the users are constrained by the activity of another user.



Quad-Head KVM-Switch

Using the OSD, each user can select the CPU that he wants to connect to. The OSD display shows if the desired CPU has already been assigned to another user. Depending on the switch configuration, access to this CPU Port will be denied ort he former user will be replaced by the new user.

Depending on the switch configuration, access to the OSD is possible at any time or requires authentication. With the authentication, access to CPU Ports and/or User Ports can further be restricted by assigning specific user levels. Alternatively, the user can be assigned to one or more user groups with access to a defined set of CPU Ports and/or User Ports.

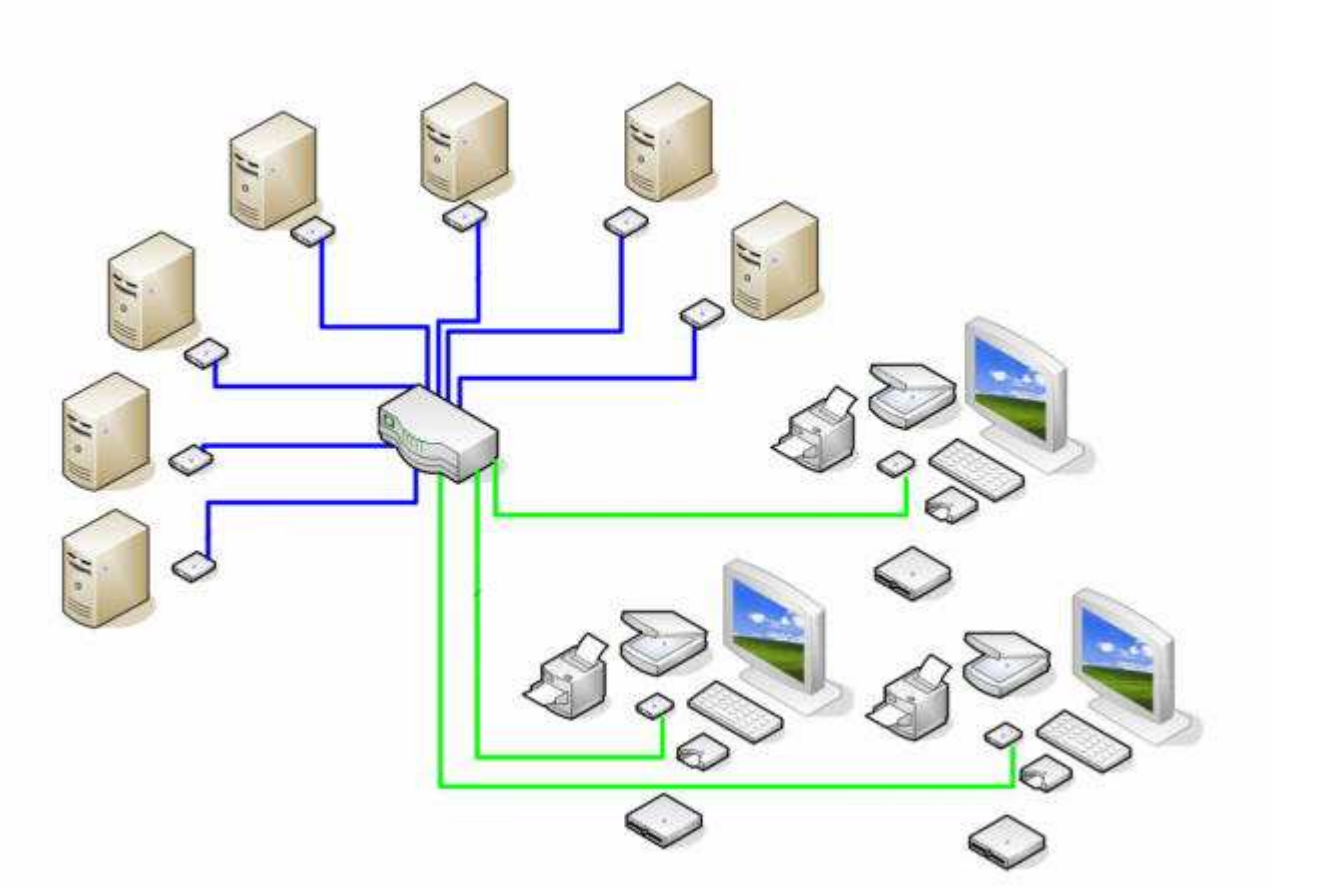
With the “Follow-Me” function, you can copy your own display content to one or more additional monitors.

From a Quad-Head User Port you might also access a Single-Head- or Dual-Head- CPU. With a Single-Head CPU, monitors 2, 3 and 4 will remain dark (not connected) and with a Dual-Head CPU, monitors 3 and 4 will remain dark (not connected).

Single - Head KVM switch / USB 2.0 mode

In Single-Head KVM switch / USB2.0 Mode up to 8 Users with one USB 2.0 link (for periphery devices such as storage devices, printers etc. in addition to keyboard & mouse) can access up to 16 CPUs. Up to 4 periphery devices can be attached directly to the remote unit, more by using regular USB 2.0 hubs.

NON-Blocking Access for all users is granted and none of the users are constrained by the activity of another user.



Single-Head KVM/USB2.0 Switch

Using the OSD, each user can select the CPU that he wants to connect to. The OSD display shows if the desired CPU has already been assigned to another user. Depending on the switch configuration, access to this CPU Port will be denied ort he former user will be replaced by the new user.

Depending on the switch configuration, access to the OSD is possible at any time or requires authentication. With the authentication, access to CPU Ports and/or User Ports can further be restricted by assigning specific user levels. Alternatively, the user can be assigned to one or more user groups with access to a defined set of CPU Ports and/or User Ports.

With the “Follow Me” function, you can copy your own display content to one or more additional monitors.

From a Single-Head KVM/USB2.0 Port you might also access a Triple-Head KVM/USB2.0 CPU. Operation, however, is limited to the first monitor in this case.

If you access a CPU without related USB Port, your USB periphery will not be available.

Devices with serial/audio option

The audio/serial option allows bi-directional stereo audio and a full-duplex serial data link to be sent across the regular interconnection cable in addition to keyboard, mouse and VGA/DVI video. To set up your video, keyboard, mouse, follow the instructions in the user guide. To set up the extender's audio and serial link, follow all of the instructions detailed in the extender manuals. If you have any questions, contact our technical support.

Please note that Dual-Head KVM Extenders and all Media Extender support a 3-wire connectiton (Tx/Rx/GND) only. Connected devices must support a Software Handshake (XON(XOFF)

No setting up or user adjustments are required. Please note that on the dual access model, the serial link is always active. The Remote Unit's serial port is wired as DTE (i.e. the same as that on a CPU). To connect a serial printer (or other DTE rather than DCE device) to the Remote Unit, you will need a null modem (crossover) cable between the Remote Unit and the printer. A serial touch-screen may be plugged directly into the Remote Unit.

Serial Interface – Handling Multiple Serial Devices

The serial interface transmits/receives six signals (3 signals in each direction). Normally four of these signals are used for hardware handshaking (in addition to Tx & Rx). However, because each handshaking line can support signals up to 19,200 Baud it is possible to configure the serial interface to handle up to three simple 2-wire (Tx/Rx only) serial links. To do this you will need to construct a custom breakout cable. Please contact technical support for further information. Select Xon/Xoff software flow control on the printer and CPU.

Audio Interface - Setup and Operation

The audio interface is line-level and is designed to take the output from a sound card (or other line-level) source and be connected to a set of powered speakers at the other end of the link. Stereo audio may be transmitted either way across the link (simultaneously). No setup is required unless a microphone is connected to the Remote Unit. Connect up as follows:

- Take the line-level output from your sound card (green connector) and connect to 'Line In' on the extender.
- A set of powered speakers may be connected directly to 'Line Out' at the opposite end of the link.

Audio Interface – Using a Microphone

A microphone may be plugged into the 'Line In' connector on the Remote Unit. There are two ways of setting up a microphone:

- The Local Unit's 'Line Out' connection should normally be wired to the microphone input (red) on your sound card. The sound card should then be set up to provide additional amplification (+20dB). This is the preferred connection method.
- Alternatively, the Remote Unit itself can provide microphone amplification. To set this, open up the Remote Unit and locate the jumper labeled 'MIC' on the daughterboard. Connect this jumper across the pins. The Local Unit's 'Line Out' connection should then be wired to 'Line In' (blue) on your sound card.

If your microphone is already amplified, follow the second method but DO NOT install the amplification jumper in the Remote Unit.

SERVICE AND TECHNICAL SUPPORT

Service Information

Maintenance and Repair

This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics
Attn: RA_____
10707 Stancliff Road
Houston, Texas 77099 USA

Technical Support

If you are experiencing problems, or need assistance in setting up, configuring or operating your Orion unit, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673
E-Mail: TechSupport@rose.com
Web: www.rose.com

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

SAFETY

The Orion has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the Orion should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

- Follow all instructions and warnings marked on this Unit.
- Except where explained in this manual, do not attempt to service this unit yourself.
- Do not use this unit near water.
- Assure that the placement of this unit is on a stable surface or rack mounted.
- Provide proper ventilation and air circulation.
- Keep power cord and connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power adapter and connection cables designed for this Unit.
- Use only a grounded (three-wire) electrical outlet.
- Use only the power adapter provided with the unit.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Operate this Unit only when the cover is in place.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from its electrical outlet before cleaning.
- Unplug this Unit from the electrical outlet and refer servicing to a qualified service center if any of the following conditions occur:
  - The power cord or connection cables are damaged or frayed.
  - The Unit has been exposed to any liquids.
  - The Unit does not operate normally when all operating instructions have been followed.
  - The Unit has been dropped or the case has been damaged.
  - The Unit exhibits a distinct change in performance, indicating a need for service.

Safety information

Documentation reference symbol. If the product is marked with this symbol, refer to the product documentation to get more information about the product.

WARNING A WARNING in the manual denotes a hazard that can cause injury or death.

CAUTION A CAUTION in the manual denotes a hazard that can damage equipment.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazardous conditions and have taken appropriate steps.

Grounding
There must be an un-interruptible safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied power cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

Servicing
There are no user-serviceable parts inside these products. Only service-trained personnel must perform any servicing, maintenance, or repair.

The user may adjust only items mentioned in this manual.

Troubleshooting

Troubleshooting - Monitor

There is no picture.

- Check the power supply connection at the Local and Remote Unit. Is the Power LED at the Local and Remote Unit illuminated? If not, the internal power supply may be damaged or there may be an internal error.
- Check that the interconnection cable is connected at the Local Unit and the Remote Unit. Is the Link Status LED illuminated? If not, there may be a problem with the interconnection cable:
- Are there errors through data transmission over CATx- cable (cable too long, too high attenuation or too much EMI interferences)? Is the Data Error LED illuminated or blinking? If yes, check cable length and environment.
- Video Okay LED is dark: CPU does not provide a video signal – Check settings of the graphic card. Try connecting a monitor to the local output to see whether or not there is a signal.

Jittery pictures at video presentations

- With high monitor resolutions, the data volume that can be transferred may exceed the available bandwidth, so the data throughput must be reduced. For this, the device uses a RLE compression algorithm. If the necessary compression factor is not reached, not all pictures of the graphic card are transferred (frame dropping) and the video presentation may begin to “jitter”.
- Hint: Use a lower resolution, which is a little larger than the resolution of the stored film material. If the monitor as higher resolution, then the monitor can take over the scaling of the video data. For the image quality it is irrelevant whether the scaling is done via the CPU or via the monitor.
- Hint: Set the color depth to 16/24Bit AUTOSELECT. Usually the human eye is not able to differentiate between so many different colors with moving pictures. A reduction to 16 bits reduces the data volume that has to be transferred without loss of image quality.

Troubleshooting – USB Keyboard / Mouse

USB Keyboard / USN Mouse do not work

Although we tried to design the devices as transparent as possible, we can’t ensure that all devices are compatible.

USB Mouse makes ”jerky leaps”

- With high monitor resolutions, the data volume that can be transferred may exceed the available bandwidth, so the data throughput must be reduced. For this, the device uses a RLE compression algorithm. If the necessary compression factor is not reached, not all pictures of the graphic card are transferred (frame dropping) and the mouse may make jerky leaps.

  Hint: Use a lower resolution or a background which can be compressed better: Please avoid photo-backgrounds or color gradient – single-colored backgrounds are optimal and permit highest possible compression rates and highest frame rates.

APPENDICES

Appendix A – General Specifications

Power Supply	Voltage AC: 90-240VAC-0.5A-47-63Hz
Power required	230V/2000mA – 115V/4000mA
Interfaces	RJ45 (INTERCONNECT) 1000 Mbit High-speed transmission. Wiring acc. EIA/TIA 568B Gigabit Ethernet
LC (Glass Fiber)	1000 Mbit High-speed transmission. Corresponds to Gigabit Ethernet
RJ45 – ETHERNET (Control Port)	Standard ETHERNET access for HTTP, FTP, TELNET
DB9 – Serial (Control Port)	115.2 KBAUD, 8 data bits, 1 Stop bit, NO parity Limited Hardware Handshake (DSR)
CATx Cable Length	CATx installation cable 140m (400ft) - AWG24 (solid cable) CATx patch cable 70m (200ft) - AWG26/8 (stranded cable)
Type of Interconnection Cable	CATx installation cable AWG24 (solid cable) S/UTP (Cat5) cable acc. EIA/TIA 56A, TSB 36 or Digital STP 17-03170. Four pairs AWG 24. Wiring acc. EIA/TIA 568A 1000BaseT). CATx patch cable AWG26/8 (stranded cable) S/UTP (Cat5) cable acc. EIA/TIA 56A, TSB 36 or Digital STP 17-03170. Four pairs AWG 26/8. Wiring acc. EIA/TIA 568A (1000BaseT).
Maximum Length of Fiber Cable	Singlemode 9 µm 10.000m (32.750ft) Multimode 50µm 400m (1.300ft) Multimode 62.5µm 200m (650ft)
Size and Shipping Weight	483 x 85 x 450mm (19”/2U x 18”)
Weight (typical):	6kg (12.9lb)
Environmental	Operating Temperature 41 to 113℉ (5 to 45 ℃) Storage Temperature -13 to 140℉ (-25 to 60 ℃) Relative Humidity max. 80% non-condensing
Serial link:	Serial Speed: Any up to a maximum of 19,200 Baud
Serial Data Format:	Format independent
Flow Control:	RTS, CTS, DTR, DSR are sent across link
Audio link:	
Description:	Bi-directional stereo audio link
Transmission Method:	Digitized virtually CD quality audio (16-bit, 38.4 KHz)
Signal Levels:	Line-Level (5 Volts P-P maximum)
Input Impedance:	47K
Local Unit Connectors:	2 x 3.5mm stereo jack socket (Line In & Line Out)
Remote Unit Connectors:	2 x 3.5mm stereo jack socket (Line/Mic In & Line Out)
Microphone Support:	A microphone may be connected to the Remote Unit. A pull-up resistor provides bias for condenser microphone. Option to set microphone amplification to +17dB

Appendix B – Part numbers

Part # Orion Unit	Description
CATx– 8 Users	
ORS-TP08x08	8x8 - 8 users, 8 CPUs, CATx, DVI, USB 2.0
ORS-TP08x16	8x16 - 8 users, 16 CPUs, CATx, DVI, USB 2.0
ORS-TP08x24	8x24 - 8 users, 24 CPUs, CATx, DVI, USB 2.0
ORS-TP08x32	8x32 - 8 users, 32 CPUs, CATx, DVI, USB 2.0
CATx– 16 Users	
ORS-TP16x08	16x8 - 16 users, 8 CPUs, CATx, DVI, USB 2.0
ORS-TP16x16	16x16 - 16 users, 16 CPUs, CATx, DVI, USB 2.0
ORS-TP16x24	16x24 - 16 users, 24 CPUs, CATx, DVI, USB 2.0
ORS-TP16x32	16x32 - 16 users, 32 CPUs, CATx, DVI, USB 2.0
Multimode Fiber – 8 Users	
ORS-FM08x08	8x8 - 8 users, 8 CPUs, Multimode Fiber, DVI, USB 2.0
ORS-FM08x16	8x16 - 8 users, 16 CPUs, Multimode Fiber, DVI, USB 2.0
ORS-FM08x24	8x24 - 8 users, 24 CPUs, Multimode Fiber, DVI, USB 2.0
ORS-FM08x32	8x32 - 8 users, 32 CPUs, Multimode Fiber, DVI, USB 2.0
Multimode Fiber – 16 Users	
ORS-FM16x08	16x8 - 16 users, 8 CPUs, Multimode Fiber, DVI, USB 2.0
ORS-FM16x16	16x16 - 16 users, 16 CPUs, Multimode Fiber, DVI, USB 2.0
ORS-FM16x24	16x24 - 16 users, 24 CPUs, Multimode Fiber, DVI, USB 2.0
ORS-FM16x32	16x32 - 16 users, 32 CPUs, Multimode Fiber, DVI, USB 2.0
Singlemode Fiber – 8 Users	
ORS-FS08x08	8x8 - 8 users, 8 CPUs, Singlemode Fiber, DVI, USB 2.0
ORS-FS08x16	8x16 - 8 users, 16 CPUs, Singlemode Fiber, DVI, USB 2.0
ORS-FS08x24	8x24 - 8 users, 24 CPUs, Singlemode Fiber, DVI, USB 2.0
ORS-FS08x32	8x32 - 8 users, 32 CPUs, Singlemode Fiber, DVI, USB 2.0
Singlemode Fiber – 16 Users	
ORS-FS16x08	16x8 - 16 users, 8 CPUs, Singlemode Fiber, DVI, USB 2.0
ORS-FS16x16	16x16 - 16 users, 16 CPUs, Singlemode Fiber, DVI, USB 2.0
ORS-FS16x24	16x24 - 16 users, 24 CPUs, Singlemode Fiber, DVI, USB 2.0
ORS-FS16x32	16x32 - 16 users, 32 CPUs, Singlemode Fiber, DVI, USB 2.0

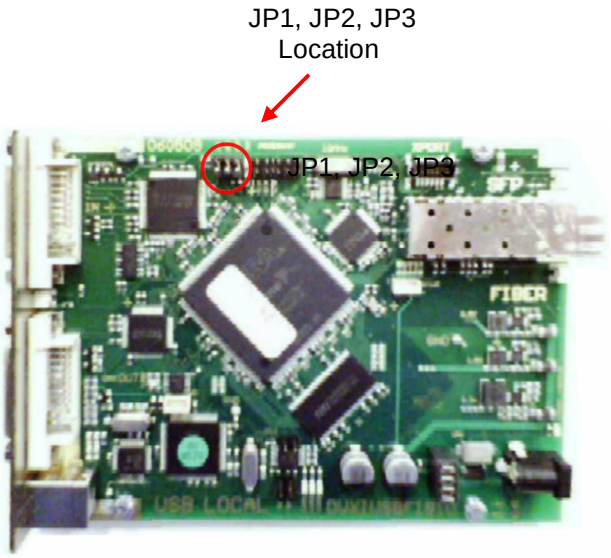
Orion Transmitters and Receivers

Part #	Description
Receivers - CATx	
ORT-SRDTX0D1D	Receiver, Video only, CATx
ORT-SRDTXHD1D	Receiver, KVM, DVI, USB HID, Single-head, CATx
ORT-SRDTXHD2D	Receiver, KVM, DVI, USB HID, Dual-head, CATx
/AUD	Audio / Serial Option
Receivers – Multimode Fiber	
ORT-SRDFM0D1D	Receiver, Video only, Fiber Multimode
ORT-SRDFMHD1D	Receiver, KVM, DVI, USB HID, Single-head, Fiber Multimode
ORT-SRDFMHD2D	Receiver, KVM, DVI, USB HID, Dual-head, Fiber Multimode
/AUD	Audio / Serial Option
Receivers – Singlemode Fiber	
ORT-SRDFS0D1D	Receiver, Video only, Fiber Singlemode
ORT-SRDFSHD1D	Receiver, KVM, DVI, USB HID, Single-head, Fiber Singlemode
ORT-SRDFSHD2D	Receiver, KVM, DVI, USB HID, Dual-head, Fiber Singlemode
/AUD	Audio / Serial Option
Transmitters – CATx	
ORR-DLDTX0D1D	Transmitter, Video only, CATx
ORR-DLDTXHD1D	Transmitter, KVM, DVI, USB HID, Single-head, CATx
ORR-DLDTXHD2D	Transmitter, KVM, DVI, USB HID, Dual-head, CATx
/AUD	Audio / Serial Option
Transmitters – Multimode Fiber	
ORR-DLDFM0D1D	Transmitter, Video only, Fiber Multimode
ORR-DLDFMHD1D	Transmitter, KVM, DVI, USB HID, Single-head, Fiber Multimode
ORR-DLDFMHD2D	Transmitter, KVM, DVI, USB HID, Dual-head, Fiber Multimode
/AUD	Audio / Serial Option
Transmitters – Singlemode Fiber	
ORR-DLDFS0D1D	Transmitter, Video only, Fiber Singlemode
ORR-DLDFSHD1D	Transmitter, KVM, DVI, USB HID, Single-head, Fiber Singlemode
ORR-DLDFSHD2D	Transmitter, KVM, DVI, USB HID, Dual-head, Fiber Singlemode
/AUD	Audio / Serial Option

Appendix C – DDC / Color depth set-up (Local Unit)

The DDC information and color depth can be modified from the default value settings (Obtain the DDC information from the internal DDC table and 16/24Bit auto-select color depth). Refer to Appendix C for instructions on changing the default values.
Remove the upper portion of the unit chassis and orient the PC board as shown below. Note the location of jumpers JP1, JP2, and JP3 on the local unit (Transmitter).

JP1 and JP2 are used to select if the DDC information is taken from the internal DDC table, from the local monitor or from the remote monitor. Set the jumpers as shown in table 1 for the selection required.



DDC	JP1	JP2
From internal DDC table (Default)	▯ ▯	⊠ ⊠
From the local monitor	⊠ ⊠	▯ ▯
From the remote monitor ***	▯ ▯	▯ ▯

***** Procedure for loading the DDC information from the remote monitor:**

- Switch on the system: Local and Remote Unit, CPU and monitor. Connect the CPU with Local Unit and Remote Unit with monitor (On Dual-Head devices, connect BOTH monitors). Connect Local and Remote Unit with the CATx or fiber cable.
- Unplug the remote monitor's video-cable from the Remote Unit (On Dual-Head devices, unplug BOTH monitors).
- Switch on the monitor if it is switched off. On Dual-Head devices, connect and switch on BOTH monitors!)
- Re-plug the remote monitor's video-cable into the Remote Unit (On Dual-Head devices, re-plug BOTH monitors).
- The DDC information of the remote monitors is read automatically, transferred to the Local Unit and stored into the DDC-EPROM.
- After a successful reprogramming, the Video-OK' LED at the Local Unit blinks rapidly for approx. 1 second.

Selecting the Color Depth

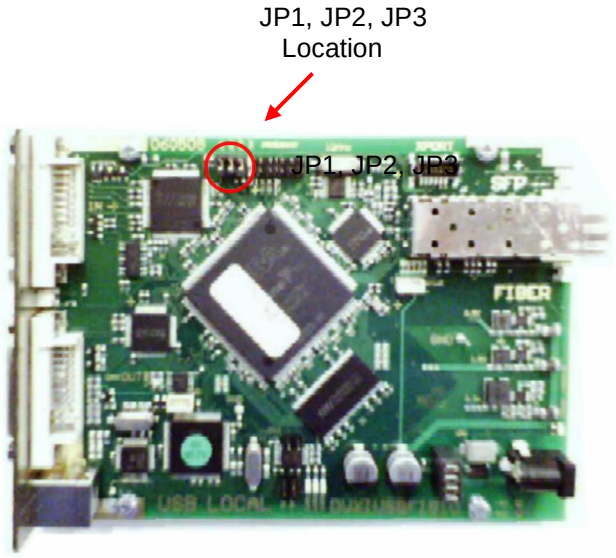
Color Depth	JP3
16 / 24 Bit AutoSelect Color depth depends on frame contents (Default)	
24 Bit	

Set-up Remote Unit

Selecting the moment of switching to the next frame

The transmission of screen data is not synchronous to the screen change of the graphic card. Normally, the transmission is terminated when a frame is displayed on the screen. If the device switches to the new frame during HSYNC, the displaying period of the old frame, you may see horizontal screen breaks at the moment of switching (default). Alternatively, you can set up the units to idle until the actual frame is displayed completely, during VSYNC. Using this method, the number of frames per second transmitted is lower.

Remove the upper portion of the remote (receiver) unit chassis and orient the PC board as shown below. Note the location of jumpers JP1, JP2, and JP3 on the remote unit (Receiver). Set the jumper on JP3 as shown below.



Moment to Switch	JP3	
Switching during HSYNC (Default)		Higher frame rate but (possibly) horizontal breaks detectable
Switching during VSYNC		Lower frame rate, no horizontal breaks detectable but (possibly) stepping pictures.

Appendix D – Serial switching commands

Using the serial interface, the whole switch matrix of the Orion™ Switch can be controlled. The functionality corresponds to the **Switching in OSD / Crosspoint Mode.**

Optionally, the Unit echoes all executed switch commands via either the serial interface or the network interface. By means of this echo, the actual switch status of the switch can be monitored at any time and user applications can be realized based on this echo.

As an additional application, the serial interface may be used to clone a master switch to additional slave units (Daisy Chain).

Communication Format

For communication, please set up the format of the serial data communication to:
115,2K,8,1,NO
(115.2 KBAUD, 8 Data bit, 1 Stop bit, NO parity)

Communication Structure (Command)

<STX>, <command byte (CMD)>, [data bytes (D0..DN)], <ETX>
[ ] = optional elements

Communication Structure (Response)

<ACK>, [<ECHO>]
[ ] = optional elements
<ECHO> reports the switch sequences solicited by a command and thus the new switch status of the switch. The echo can be used to update user applications and to operate several switches in parallel.

Parameter Description

Command byte in the range of 0x40...0x6F (see the list of allowed commands below)

Data Bytes
a) Binary data: in order to prevent that, during the transmission of binary data, control statements or control commands are transferred, the data are divided into low-nibble and high-nibble. The data are distributed to the low-nibbles of two bytes and provided with an offset by 0x60 e.g. 0x1F => 0x61 + 0x6F
b) 7bit-data (0x0...0x7F) are provided with an offset by 0x80, e.g. 0000011 => 0x83
c) ASCII-data => 0x20… 0x7E are unencrypted transmitted

(Special-)Character	ACK	0x06
	NAK	0x15
	STX	0x02
	ETX	0x03
	CR	0x0D
	ESC	0x1B
	HTAB	0x09
	LF	0x0A

Sequence of data communication

Switch	**Control CPU**
Acquiring command	Sending a command
Processing the command, Blocking further commands	
a) Errors occurred <NAK> b) No errors <ACK>, <ECHO> c) Optional: reply telegram with data	
	a) repeat telegram b) next command c) receive and process the replay telegram

The Serial Interface can be blocked while an OSD has been opened.

Telegrams, Switching functions Console (“Video signal“)

No	Function	Telegram	Reply
1	CON# Output Signal from CPU#	STX, 0x47, <CON#>, <CPU#>, ETX	ACK, ECHO
2	CON# Output off	STX, 0x48, <CON#>, ETX	ACK, ECHO
3	CON01…CON16 Output Signal from CPU#1…CPU#16, resp. • requires 16 CPU# • 0x80 for “No Output“	STX, 0x49, <CPU#1>, <CPU#2>, …, <CPU#16>, ETX	ACK, ECHO
4	All CON Ports Output off	STX, 0x4A, ETX	ACK, ECHO

Telegrams, Switching functions CPU (K/M-“Return Channel“)

No	Function	Telegram	Reply
5	CPU# Output Signal from CON#	STX, 0x4B, <CPU#>, <CON#>, ETX	ACK, ECHO
6	CPU# Output off	STX, 0x4C, <CPU#>, ETX	ACK, ECHO
7	CPU01…CPU32 Output Signal from CON#1…CON#32, resp. • requires 32 CON# • 0x80 for “No Output“ **Attention: only 16 CON Ports available, requires 16x 0x80!**	STX, 0x4D, <CON#1>, <CON#2>, …, <CON#32>, ETX	ACK, ECHO
8	All CPU Ports Output off	STX, 0x4E, ETX	ACK, ECHO
9	Establish Bidi-Connection CON# □ CPU#	STX, 0x4F, <CON#>, <CPU#>, ETX	ACK, ECHO
10	Disconnect CON#	STX, 0x50, <CON#>, ETX	ACK, ECHO

Telegrams, Switching functions Switch Matrix

No	Function	Telegram	Reply
11	Set Switch Matrix (Complete Setup): • requires 48 values (first 16 CPU's, then 32 CON Ports) • 0x80 for "No Output" • CON01…CON16 Output Signal from CPU#1…CPU#16 (cf. Telegram 3) • CPU01…CPU32 Output Signal from CON#1…CON#32 (cf. Telegram 7) **Attention: Correct assignment to be ensured by user!** **Attention: only 16 CON Ports available, requires 16x 0x80!**	STX, 0x51, <CPU#1>, <CPU#2>, …, <CPU#16>, <CON#1>, <CON#2>, …, <CON#32>, ETX	ACK, ECHO
12	Reset Switch Matrix	STX, 0X52, ETX	ACK
13	Report Switch Matrix (Complete Setup) • Output of 48 values • 0x80 for „No Output" • The first 16 values describe CON Port Output (cf. Telegram 3) • The next 32 values describe the CPUOutput (cf. Telegram 7)	STX, 0x53, ETX	STX, 0x53, <CPU#1>, <CPU#2>, …, <CPU#16>, <CON#1>, <CON#2>, …, <CON#32>, ETX
Save / Load Switch Matrix			
14	Save Matrix Configuration to Flash	STX, 0x66, 0x8C, <Config File No >, ETX	ACK
15	Load Matrix Configuration from Flash	STX, 0x67, 0x8C, <Config File No >, ETX	ACK, ECHO (contains Complete Setup)

Assignment of Configuration Files to Telegram

Configuration Files	Config File No		Configuration Files	Config File No
Default.sys	0x80		Config05.sys	0x85
Config01.sys	0x81		Config06.sys	0x86
Config02.sys	0x82		Config07.sys	0x87
Config03.sys	0x83		Config08.sys	0x88
Config04.sys	0x84			

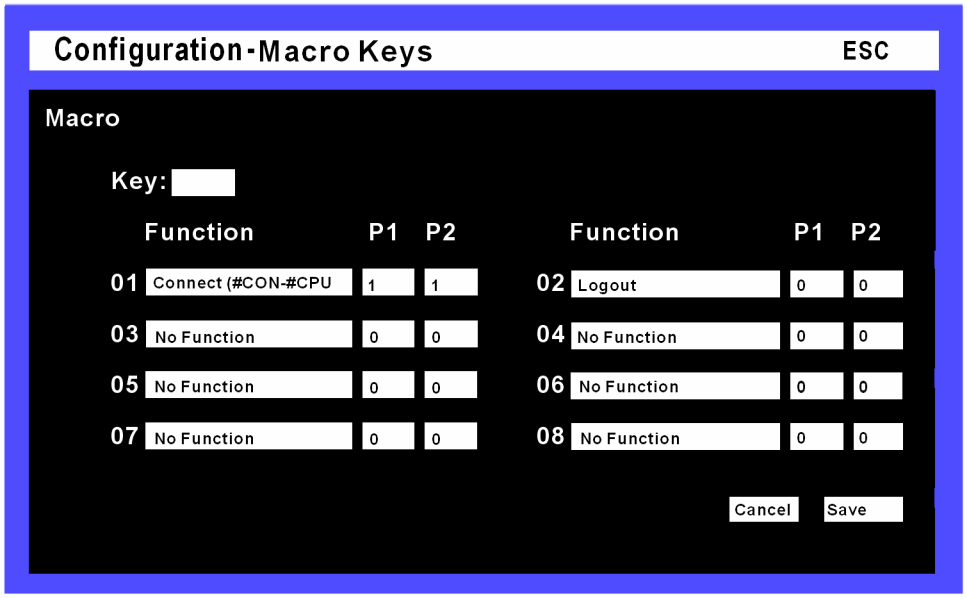
Appendix E – Programming Macros

This appendix describes the programming of switch macros. The macros will be stored for each console separately.

To activate these macros, you need a macro keyboard connected to one of the USB HID Ports on the Remote Unit.

To set-up the macros, select the option “Macro Keys” in the “Configuration” menu and press <RETURN>.
The “Macro Keys” mask is displayed full screen as shown below

NOTE:
If you want to use Keyboard, mouse and macro keyboard simultaneously, you will need an extender kit with four USB HID Ports or a USB Hub!



Field	Type	Description
No	Select	Number of the command (8 commands max)
Command	Select	Connect P1 to P2 Bidirectional Connection of CON Port P1 with CPU P2
		Connect Video P1 to P2 Video Connection of CON Port P1 with CPU P2
		Disconnect P1 Disconnect CON Port P1
		Open P1 (cf. 7.1.3) Open Configuration File P1
		Save Save current configuration inside the switch
		Save As P1 Save current configuration in Configuration File P1
		Logout
P1	**VAL2**	1) Number of CON Port (0 = own CON Port). 2) Number of Configuration File (0 = Default
P2	**VAL2**	1) Number of CPU Port to be connected with CON Port P1.

Keyboard Commands:

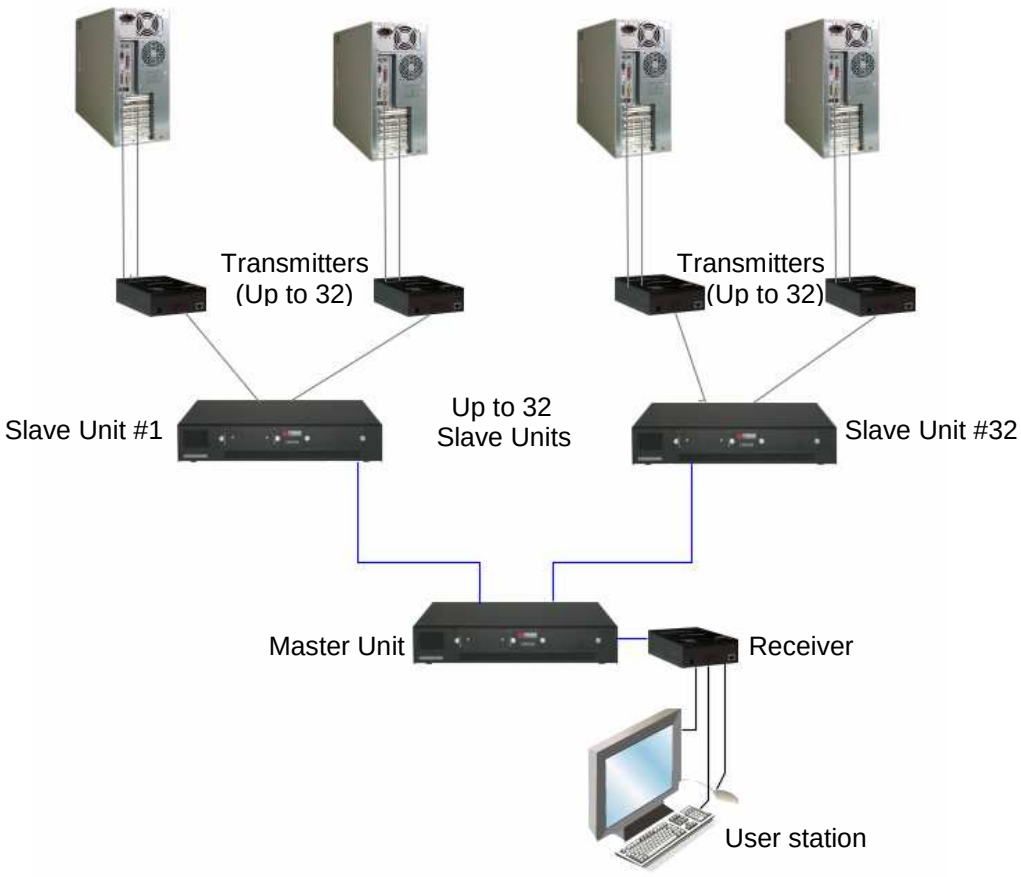
<Page up>	Page up to previous macro
<Page down>	Page down to next macro
<Cursor left>	Move to left field
<Cursor right>	Move to right field
<Cursor up>	Line up
<Cursor down>	Line down
<Tab>	Next field
<Shift> + <Tab>	Previous field
<->	Select next function
<+>	Select previous function
<RETURN>	Apply and save macros in current configuration
<ESC>	Back to upper Menu

Appendix F – Cascading units

The Orion Unit can be cascaded to other Orion units to increase the number of connected computers to a maximum of 1024 connected computers.

To cascade the units:

1. Connect the computers DVI video and USB ports to the transmitters configured for your application.
2. Connect the transmitters to the Orion Slave units CPU ports using CATx or Fiber cable.
3. Connect the Slave unit's COMx port to the Orion Master unit's CPUx port using CATx or Fiber cable.
4. The User station's keyboard, monitor, and mouse connect directly to the corresponding Receiver's ports.
5. The receiver connects to the Orion Master unit using CATx or Fiber cable.



ROSE ELECTRONICS

Server Management Solutions

株式会社サイバネテック

〒103-0014　東京都中央区日本橋蛎殻町1-16-11
TEL ： 03-3668-8089　FAX：03-3668-9872
URL ： www.cybernetech.co.jp